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SCIENCE IN THE OLD DOMINION.*

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Just one hundred and fifty years ago this week, on December 12, 1787, a Richmond newspaper, the *Virginia Independent Chronicle*, carried an extended notice of the first American edition of "Notes on the State of Virginia," by Thomas Jefferson. This great work may be said to have marked the end of the Colonial period in Virginian science.

At the beginning of that period, in Elizabethan times, Galileo was still a student at the University of Pisa, Tycho Brahe had just completed his observatory, and Paracelsus and Agricola only recently had died. Such was the background upon which rested the first scientific work done in connection with Virginia.

Scientific interest in connection with Virginia antedated the establishment of the first permanent settlement. Long before any English colonists were sent to America, in the days when Virginia embraced all the known territory between French Canada and Spanish Florida, the people of England were anxious to learn all they could regarding the wonderful New World, and to see with their own eyes its strange animals, plants, and other natural products, of which more or less fantastic accounts had reached Europe, chiefly through Spanish and French sources.

In deference to this popular desire, and to satisfy his own curiosity, Sir Walter Raleigh, on sending out his second expedition to Virginia under the command of his cousin Sir Richard Grenville in 1585, appointed as geographer to the expedition Thomas Harriott. Mr. Harriott was a mathematician and astronomer, one of the foremost scholars of his time, and the first man of science to visit the Americas. He had graduated from Oxford in 1580 and soon afterwards had entered Raleigh's family as a teacher of mathematics.

He was commissioned by Raleigh to report upon the natural products of Virginia. After his return to England he made the acquaintance, through Raleigh, of Henry Percy, Earl of Northumberland, well known as a generous patron of men of science, who granted him a pension of £120 a year.

In 1588 Harriott published a "Briefe and True Report of the New Found Land of Virginia" in which he described the Indians and their customs and mentioned eighty-six kinds of birds and twenty-eight kinds of mammals, as well as various kinds of aquatic creatures and vegetable products.

At that time silk was one of the leading luxurious necessities of the aristocratic English, so it was natural that he should discourse upon the native silk-worms at some length. He wrote:

> Worme Silke: In manie of our iourneyes we found silke wormes fayre and great; as bigge as our ordinary walnuttes. Although it hath not beene our happe to have found such plentie as elsewhere to be in the countrey we haue heard of; yet seeing that the countrey doth naturally breede and nourish them, there is no doubt but if art be added in planting of mulberry trees and others fitte for them in commodious places, for their feeding and nourishing; and some of them carefully gathered and husbanded in that sort as by men of skill is knowne to be necessarie; there will rise as great profite in time to the Virginians, as thereof doth now to the Persians, Turkes, Italians and Spaniards.

He was the first English convert to the habit of tobacco smoking, to which habit he attributed the superior healthfulness of the Indians. He said:

> And as by sucking it through pipes of clay they purged all gross humours from the head and stomach, opened all the pores and passages of the body, preserv-

*Founders' Day Address, Medical College of Virginia, Richmond, December 7, 1937.

ing it from obstructions or breaking them, whereby they notably preserved their health, and knew not many grievous diseases, wherewith we in England are often afflicted.

The fact that Thomas Harriott was sent to Virginia by Raleigh does not seem so surprising when we remember that Sir Walter was more or less of a scientific man himself. It is recorded that during his incarceration in the Tower of London from 1603 to 1616 he devoted himself to chemical experiments as well as to literary work.

In accordance with the wishes of Queen Elizabeth, and, indeed, by her direction, John White (or With) also accompanied this expedition as artist. A third member of the expedition interested in scientific matters was Thomas Glover, a surgeon and a close observer of Indian customs.

White again visited Virginia in 1587, this time as governor of the third group of colonists to be sent over. During his stay in Virginia he made numerous water color drawings of the Indians, and of many kinds of plants, birds, fishes, insects, and other forms of life. One hundred and twelve of his sketches are preserved in the British Museum. Copies of several of Captain White's pictures were published by Theodore de Bry in 1591, and a woodcut of a painting by him of a butterfly was published by Thomas Moufet (or Moffett) in 1634. This was the first insect to be described from North America. The drawing, now in the British Museum, represents a yellow female of the common yellow swallowtail (*Papilio glaucus*). It is labeled "Mamank anois" which, according to William Strachey, was the local Indian equivalent for butterfly.

Curiosity in regard to the natural products of Virginia was very general in England, and even the kings were anxious to secure specimens of the strange animals and plants for their personal cabinets. The State Papers of Great Britain contain many entries of interest in this connection. King James I, who had been imbued with a genuine interest in learning by his principal tutor, George Buchanan, was an enthusiastic collector. On December 15, 1609, the Earl of Southampton wrote to the Earl of Salisbury that he had told the King of the Virginia squirrels brought into England that were said to fly. The King very earnestly asked if none were provided for him—whether Salisbury had none for him—and said he was sure Salisbury would get him one. The writer apologized for troubling Lord Salisbury, "but," he continued, "you know so well how hee is affected to these toyes. . . ."

It was James I who made the first determined effort to establish the silk industry in Virginia. As early as 1609 he sent to the Colony silk-worm eggs and mulberry trees. The first shipment was lost through shipwreck, but later shipments arrived safely.

In 1615 Ralphe Hamor, who had succeeded William Strachey as Secretary of the Virginia Colony, published notes on various native animals. Among others, he described the flying squirrels and opossums, and he remarked on the enormous numbers of wild pigeons. Concerning silk-worms he wrote:

> The silke wormes sent thither from *England*, in seeds the last winter, came foorth many of them the beginning of *March*, others in *Aprill, Maye*, and *Iune*, thousands of them growne to great bigness, and a spinning, and the rest well thriuing of their increase, and commodity well knowne to be reaped by them, we haue all most assurance (since sure I am) no Country affoordeth more store of *Mulberry* trees, or a kind whose leafe they more delight or thriue better.

Applied science, at least experiments in applied science, has its beginning in Virginia, according to Mr. Hamor, in 1612. It was John Rolfe who perfected a method of curing tobacco so that it would reach England in good condition. But generally speaking in colonial times applied science was discouraged. England did not look with favor on the development of manufacturing abroad. The colonies were regarded as markets for, not producers of, manufactured articles.

It is interesting to note that as early as 1617 Samuel Argall mentioned that "ground wore out with maze will bring English grain"—in other words, the idea of a succession of crops was beginning to take form.

In these early colonial days commerce was uppermost in the minds of most people. Stimulated by the example set by the Portuguese and Spanish, England looked upon her colonies as children whose duty it was—or at least ought to be—to supply her with certain commodities otherwise obtainable only from foreign countries at high prices. To Virginia she looked especially for silk and wines.

So for many years, indeed all through colonial times, pamphlets and books urging the Virginians to grow silk and explaining to them the benefits that would result from following this course were sent

to the Colony. In 1622 King James I, with the approval of the Earl of Southampton, even ordered the setting up of silk works and the planting of vines; neglect to plant vines and mulberry trees was to be punished. It seemed to be incomprehensible in England that the colonists should neglect grapes and mulberry trees in favor of a "smoakie Witch" against which the King himself in 1616 had published a "Counterblast to Tobacco."

The determination of the English to cajole or force the Virginians to raise silk, and the equal determination of the Virginians to raise what they pleased in spite of periods of economic distress resulting from recurrent overproduction, gave rise to a considerable volume of more or less scientific literature on silk-worm culture, largely compiled, though much of it original. One of the most persuasive of the books on silk-worm culture, entitled "The Reformed Virginian Silk-Worm" published in London in 1655, attempted to show the Virginians that silk-worm culture required "neither cost, labour, or hindrance in any of their other employments whatsoever." And it went even further, suggesting that as "there is neither Art, Skill, or Pains in the thing" there were hopes that Indians might undertake it and as a result be enabled to purchase English goods.

In the first quarter of the seventeenth century the treasurer or governor of the Virginia Company was Henry Wriothesley, third Earl of Southampton, noted for his activities as a colonizer and his interest in exploration, though best known as a friend and patron of Shakespeare. So we are not surprised to find references to exploration and colonization and to the increasing interest in science in Shakespeare's works.

The suggestion for the plot of "The Tempest," published in 1623, the year before Lord Southampton's death, was probably furnished by Sylvester Jourdan's account of the shipwreck of Sir George Somers on the Bermudas, or some other contemporary narrative of Virginian colonization. It is adapted from the tales brought back by explorers from distant lands and their stories of wild men and strange gods. It has been pointed out that the ideal commonwealth suggested by Gonzalo, though based upon Florio's translation of Montaigne's essays, bears a striking resemblance to conditions in the Virginia colony as portrayed in a letter from William Strachey dated July 15, 1610.

The interest in strange men of distant lands is well brought out by Trinculo's remarks when he first catches sight of Caliban (Act II, Scene ii):

> What have we here? a man or a fish? dead or alive? A fish: he smells like a fish; a very ancient and fish-like smell; a kind not of the newest Poor-John. A strange fish! Were I in England now, as once I was, and had but this fish painted, not a holiday fool but would give a piece of silver: there would this monster make a man; any strange beast there makes a man; when they will not give a doit to relieve a lame beggar, they will lay out ten to see a dead Indian.

All gentlemen of this period were supposed to have an interest in natural history as an integral part of their general culture, and many of the aristocrats of the time were enthusiastic collectors. Among these was George Villiers, Duke of Buckingham. John Tradescant, gardener to King Charles I, wrote in 1623 to one Nicholas that it is the Duke of Buckingham's pleasure that he should deal with all merchants from all places, but especially from Virginia, Bermudas, Newfoundland, Guinea, the Amazons, and the East Indies for all manner of rare beasts, fowls, and birds, shells and shining stones, etc.

In the domestic correspondence of Charles I, under the date of July 1625, there is a note of one Jeremy Blackman's charge, in all £20, for transporting four deer from Virginia, including corn and a place made of wood for them to lie in. Charles I sent John Tradescant the younger, the son of his gardener, to Virginia in 1637 "to gather all rarities of flowers, plants, and shells."

Heretofore the work done on the natural history of Virginia had consisted mainly of descriptions of the natural products of the land, chiefly the plants and more conspicuous birds and other creatures of the coastal plain, by untrained observers whose main preoccupation had been along other lines, combined with the sending back to England of some of the more interesting and less perishable things. These, preserved in cabinets as curios, attracted much attention.

In those days science was almost wholly included in the subject of theology, and scientific work was restricted within narrow bounds by the dogmas of the theologians. In the words of the Marquess of Salisbury science

> was the knowledge gained not by external observation, but by mere reflection. The student's microscope was turned inward upon the recesses of his own brain; and

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> when the supply of facts and realities failed, as it very speedily did, the scientific imagination was not wanting to furnish to successive generations an interminable series of conflicting speculations.

For some time there had been a growing restiveness against the restrictions placed on scientific investigations by the theologians. As early as the reign of Charles I, about 1645, there existed in England an organization referred to by the Hon. Robert Boyle, seventh son of the first Earl of Cork, as the "Invisible College." This "Invisible College" was first suggested by Theodore Haak (or Hank), a German of the Palatinate then resident in London. It consisted of weekly meetings at which the results of experimental work in philosophy—in its broad sense—were discussed. This was a rather unorthodox procedure for the time, but those who attended the meetings were among the ablest men of England, and included theologians as well as others. One of them was Dr. John Wilkins, afterwards Bishop of Chester, who had married Robina, sister of Oliver Cromwell. Another was Christopher Wren, who laid down the plan for the College of William and Mary.

According to Dr. Cromwell Mortimer

> had not the Civil Wars happily ended as they did, Mr. *Boyle* and Dr. *Wilkins,* with several other learned Men, would have left *England,* and, out of Esteem for the most excellent and valuable Governor, *John Winthrop* the younger, would have retir'd to his new-born Colony [Connecticut] and there have establish'd that *Society for promoting Natural Knowledge,* which these Gentlemen had formed, as it were, in *Embryo* among themselves.

Emigration to America was, however, forestalled. On November 28, 1660, the "Invisible College" became visible as "The Royal Society of London for Improving Natural Knowledge." On the Wednesday following word was brought that King Charles II approved the design of the meetings; in October, 1661, the King offered to be entered one of the Society; and in the next year the Society was incorporated under the name of the Royal Society, the first charter of incorporation passing the Great Seal on July 15, 1662.

Although the Royal Society remained in England, the College of William and Mary and Harvard both received considerable amounts from the estate of Mr. Boyle after his death in January 1691-'92.

Science now began to take on a new aspect. Charles II had in effect decreed that there is nothing irreligious in reporting facts. So records of observed facts and their interpretation in the light of other facts began to supersede introspection in which the aid of facts was regarded as superfluous, combined with interminable commentaries on the works of Aristotle.

Thus it naturally came about that what had heretofore been regarded chiefly as strange and anomalous curiosities of the New World began to receive the attention of earnest students who sought to allocate them in their proper place in Nature's scheme.

The development of the study of the sciences in Virginia was undoubtedly assisted materially by the freedom of thought that prevailed in the Colony. Ever since the creation of the first Legislative Assembly in 1619 Virginians had been accustomed to think for themselves, and at the same time to be tolerant of the ideas of others. The scattered nature of the settlements and the absence of large towns also conduced to the fostering of that originality which is an essential accompaniment of scientific progress.

At this time the Colony had greatly increased in size, and life had become relatively easy and comfortable. It was now that the Virginia Assembly attempted in various ways to stimulate the manufacture of cloth, the tanning of leather, and various other forms of industry involving applied science. But these efforts came to nothing, largely because of opposition by the English merchants. So the outstanding scientific developments of the period were mainly in the field of natural history.

The opportunity afforded local residents for an intensive study of the fauna, flora, and geology of Virginia—because of her loyalty gratefully called by Charles II the "Old Dominion"—opened up a new era in the development of science in the Colony, coinciding with the beginning of the era of descriptive science elsewhere.

Among the earliest and ablest representatives of this new school of descriptive science in America were the Claytons, Bannister, and Mitchell of Virginia.

The Rev. John Clayton, rector of Crofton, at Wakefield, in Yorkshire, made a journey to Virginia in 1685, and in 1688 communicated to the Royal Society an essay on the natural history of the region which was the most important account published up to that time. At about this time Thomas Glover published an account of Virginia in which he dis-

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cussed the natural history of the Colony after the manner of Wood and Morton in New England.

The Rev. John Bannister, a clergyman of the Church of England born at Twigworth, Gloucestershire, in 1650, came to Virginia before 1678 and in addition to his clerical duties applied himself assiduously to the study of natural history. He was the first to make a really scientific study of the insects and mollusks of North America. He corresponded with Sir Hans Sloane, Martin Lister, Ray, Compton, and others, and furnished them with specimens or descriptions of local animals. His catalogue of plants observed in Virginia printed in 1686 was the first systematic paper on natural history emanating from America. His notes on the insects and mollusks were transmitted to the Royal Society by James Petiver and were published in the "Philosophical Transactions."

Bannister had in his possession and exhibited to an English traveler in 1686 large bones and teeth of fossil mammals from the interior of Virginia, the first of which we have any record from North America. He was described by John Lawson in his history of North Carolina as "the greatest virtuoso we ever had on this continent." Ray referred to him as "erudissimus vir et consummatissimus," and Lister said that he was "a very learned and sagacious naturalist."

Dr. Harry B. Weiss has recently called attention to the existence in the Library of Congress of a facsimile of an old notebook written in Virginia "entitled 'Collectio insectorum et aliarum rerum naturalium in Virginia.' In addition to including a list of trees and plants of Virginia, a discussion of shells, suggested regulations for governing the conduct of clergymen sent out to Virginia, etc., it contains also some miscellaneous biological notes on various insects, listed by genera. The writer mentions 'dirt wasps,' bees 'who eat their way into hard wood,' cockroaches which overrun the larders, fire flies, butterflies, flies, cicadas, beetles, etc. The handwriting of the notebook is small and cramped, and up to the present time it has not been completely translated." Dr. Weiss remarked it would not be surprising if this Latin notebook by an unknown clergyman proved to be written by John Bannister.

The energetic, learned, and versatile Col. William Byrd made many interesting observations on the Indians and on the general natural history of Virginia. In 1694 he carried to England a female opossum that furnished the material for the first dissertation upon the anatomy of the marsupials.

Col. Byrd was an excellent observer as well as an unusually lucid and entertaining writer. Speaking of the region on the North Carolina line just west of the Great Dismal he wrote on March 26, 1728, that

> very often, in autumn, when the apples begin to ripen they are visited with numerous flights of paroquets, that bite all the fruit to pieces, for the sake of the kernels. The havoc they make is sometimes so great, that whole orchards are laid waste in spite of all the noises that can be made, or mawkins that can be dressed up, to fright them away. These ravenous birds visit North Carolina only during the warm season, and so soon as the cold begins to come on, retire back toward the sun. They rarely venture so far north as Virginia, except in a very hot summer, when they visit the most southern parts of it. They are very beautiful; but like some other pretty creatures are apt to be loud and mischievous.

Col. Byrd is reported to have killed buffaloes in 1729 south of Roanoke on the boundary between Virginia and North Carolina, and Wilson writes "On his expedition against the Cherokees, about 1760, Col. William Byrd led his troops through Smyth. He spent much time improving the Buffalo Trail into a wagon road. This, the first road building in the county, was done at government expense."

John Clayton, the naturalist, accompanied his father, John Clayton, who was later Attorney General for the Colony, to Virginia in 1705. He was Clerk of Gloster (now Gloucester) County for fifty-one years. His botanical papers, and especially his "Flora Virginica" edited by Gronovius and Linnaeus, are well known. Peter Collinson, the famous English botanist, referred to him as "my friend John Clayton, the greatest botanist of America." Jefferson maintained that Clayton was a native of Virginia. These two John Claytons, father and son, must not be confused with an earlier John Clayton, previously mentioned.

Mark Catesby lived in Virginia from 1712 to 1721, making collections and paintings of plants and animals, particularly birds. He subsequently published a magnificent work in two large volumes on the natural history of Carolina, Florida, and the Bahamas.

Dr. John Mitchell, born in England about 1680, settled at Urbanna in Middlesex County where he remained for nearly fifty years practicing medicine

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and promoting science. His dissertation on the elements of botany and zoology dated Virginia, 1738, and published in Nuremburg in 1748, was the first work on the principles of science ever written in America. His fame rests chiefly upon his investigations into the yellow-fever epidemic of 1737-'42 which were published after his death.

There were various other students of the natural history of Virginia at this period. Among them were Dr. John Tennent of Port Royal, who published some papers on botany, in particular one printed at Williamsburg in 1736 on the virtues of the Seneca snake-root in reference to pleurisy, and Dr. Graham of Dumfries, also a botanist, to whom, according to Jefferson, we are indebted for the introduction of the tomato.

Gentlemen with a keen interest in science were now becoming numerous in Virginia, as well as in the neighboring Colonies. Benjamin Franklin was the first to see the advantage of an organization which would afford those interested in science opportunity for meeting each other and for interchanging ideas. In 1743 he issued a circular entitled "A Proposal for Promoting Useful Knowledge among the British Plantations in America" in which it was urged that a society should be formed of virtuosi or ingenious men residing in the several Colonies to be called "The American Philosophical Society." In a letter to the Hon. Cadwallader Colden of New York dated April 5, 1744, he wrote that

> . . . . [I] can now acquaint you that the Society, as far as relates to Philadelphia, is actually formed and has had several meetings . . . and there are a number of others in Virginia, Maryland, Carolina, and the New England colonies who we expect to join us assoon [*sic*] as they are acquainted that the Society has begun to form itself.

The time was not yet ripe for the formation of a society of this kind, and the original American Philosophical Society soon languished and all but died. The idea of the desirability of closer association between those interested in science was, however, beginning to take root.

Col. Francis Fauquier, a devotee of the sciences and a Fellow of the Royal Society, came to Virginia as Lieutenant Governor in 1758. In the same year Dr. William Small came to Williamsburg as professor of mathematics and natural philosophy in the College of William and Mary. President L. G. Tyler of William and Mary wrote that Col. Fauquier and Dr. Small

> delighted in the society of young men, and at Fauquier's table, where Small was a constant attendant, the youths of Virginia—Jefferson, Page, Walker, McClurg—learned their lessons in the rights of man. . . . Jefferson, by nature a scientist himself and no mean inventor, referred to Dr. Small as the man who "fixed the destinies of his life," and John Page eulogized him as "the illustrious professor of Mathematics, the great Dr. Small, of Birmingham, the darling friend of [Erasmus] Darwin". . . . Besides being "the darling friend" of Erasmus Darwin, he was the intimate friend of James Watt.

Though thoroughly loyal to the Crown, Virginia was now developing a considerable degree of independence; she was beginning to regard herself as a sister, rather than as a child, of England. Her scientific men were less inclined to look to England for leadership, preferring instead to cooperate among themselves and with their colleagues in other colonies. Furthermore, the application of science to the improvement of manufacturing processes was beginning to receive serious attention.

The "Society for the Promotion of Manufactures" was formed at Williamsburg in February, 1759. This society was authorized by the General Assembly to offer bounties for discoveries and improvements in manufacturing processes. Because large sums were drained from the Colony for foreign wines and silks, this body offered £500 as a premium to any person who should, in any twelve months within eight years, make the ten best hogsheads of wine; and there was a second prize of £100 for the second best sample.

At this period training in the natural sciences was to be had almost exclusively in medical schools. Among the various medical schools that at the University of Edinburgh, in Scotland, was perhaps the favorite with the young men of America, especially of Virginia. Between 1749 and 1812 sixty-five Virginians attended this school. In 1761 there were enough young Virginians at Edinburgh to permit the establishment there of a Virginia Club, the object of which was the improvement of its members' knowledge of anatomy. The members of the Virginia Club were primarily interested in medicine, but some of them on their return to the Colony devoted themselves more or less intensively to science, and their names became prominently identified with the scientific life of the Colony.

In 1766 a new organization was formed under the title of "The American Society for Promoting and Propagating Useful Knowledge, held in Philadel-

phia." Benjamin Franklin, although absent in England, was elected its president, and the society entered upon a very promising career. In 1768 it changed its title to "The American Society held at Philadelphia for Promoting Useful Knowledge."

In the meantime, the few surviving members of the first "American Philosophical Society" formed under the old name an essentially new organization. The membership of this new organization included many of the most influential and wealthy colonists, and the energetic manner in which it organized a plan for the observation of the transit of Venus in 1769 gave it at once a respectable standing both at home and abroad.

In 1769, after negotiations that occupied nearly a year, these two societies were merged, and the "American Philosophical Society held at Philadelphia for Promoting Useful Knowledge" has from that time until now maintained an honorable position among the scientific organizations of the world. The first volume of its publications appeared in 1771 under the title of "The American Philosophical Transactions." Franklin was president of the society until his death in 1790. He was at the same time President of the Commonwealth of Pennsylvania and a member of the Constitutional Convention, and his eminence secured for the society greater prestige than would otherwise have been obtainable—indeed the society soon assumed national importance.

This society played an important part in the scientific life of Virginia. Between 1768 and 1800 eighteen Virginians were elected to membership. The first of these, elected on January 26, 1768, was Dr. Arthur Lee who had previously been an outstanding member of the Virginia Club at Edinburgh.

In order fully to appreciate the high regard in which science was held by the people of Virginia at this time, and the diversity of the lines of scientific interest, it is desirable to review the participation of Virginians in the proceedings of the American Philosophical Society. The Virginians who were members of this society were:

Richard P. Barton, elected January 20, 1792.
Col. Landon Carter, elected April 21, 1769.
James Greenway, M. D., elected April 18, 1794.
His Excellency Thomas Jefferson, listed in 1786.
Dr. Walter Jones, elected January 21, 1774.
Arthur Lee, M. D., elected January 26, 1768.
Francis Lee, listed in 1770.
Rev. Dr. James Madison, elected January 22, 1785.
James McClurg, M. D., elected January 21, 1774.
Dr. Hugh Mercer, listed in 1770.
Hon. Mann Page, listed in 1786.
Mr. Christian Frederick Post, listed in 1770.
Thomas Mann Randolph, elected April 18, 1794.
John Rouelle, M. D., elected January 20, 1792.
James Rumsay [*i. e.*, Rumsey], elected April 17, 1789.
John Stewart, elected April 21, 1797.
John Walker, listed in 1770.
His Excellency General Washington, listed in 1786.

The contributions of these gentlemen and others from Virginia were many and varied. The first contribution to economic entomology in the country was a notable memoir by Col. Landon Carter, of Sabine Hall, on "The Fly-Weavil that destroys the Wheat." This was presented to the society, through Col. Lee, on November 5, 1768. The society acknowledged themselves under great obligations to Col. Carter for the communication of the conclusions he has found (on long experience) concerning the insect's propagation and progress and the methods to be used to prevent the destruction of the wheat by it, and ordered it to be printed for the public benefit. This was done in 1771.

On March 19, 1775, Mr. R. S. Jones communicated a letter from Mr. R. Howell from Virginia about a moss used in dyeing purple, and a new silk reel; this was referred to the Committee on Husbandry and American Improvements, and the specimens were referred to Mr. Alexander for examination.

On December 17, 1779, there is recorded a letter from Rev'd Wm. Maddison [*sic*], President of William and Mary's College, containing "a series of Meteorological Observations by his Excellency Governor Jefferson and himself separately, for a year and a half; likewise a set of Experiments on what are called the 'Sweet Springs.'" Mr. Madison was thanked, and a continuance of the correspondence was requested.

In October, 1782, a specimen of Epsoms salt (?) found "fossil" in Virginia was exhibited and referred for analysis to Dr. Hutchinson.

On May 2, 1783, a letter from J. Page on the aurora of October 31, 1779, was recorded.

On October 19, 1787, a letter "on the method of cultivating cotton in Virginia" from Richard P. Barton was recorded.

On April 5, 1788, Mr. Barton presented a pamphlet by James Rumsey, of Berkeley County, Virginia, on "A plan wherein the power of steam is fully

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shown by a new constructed machine for propelling boats or vessels."

On April 18, 1788, it is recorded that James Rumsey sent by letter drawings and descriptions of: (1) An improved boiler for a steam-engine; (2) An improvement in Dr. Barker's grist-mill; (3) An improvement in the saw-mill; and (4) An improvement in raising water by means of a steam-engine.

On May 2, 1788, the Committee on Inventions reported that Rumsey and Voight's principle of increasing the steam-generating surface and diminishing the quantity of water exposed to the action of fire appears just, but the best application must be a matter of experiment; and that Rumsey's other inventions were "ingenious in theory, and well deserve a full trial." On the same date there is a record of a letter from Dr. Greenway describing the Golden *Cassia,* or Peacock flower.

On March 20, 1789, Dr. George Buchanan of Baltimore sent to the Society M. Quesnay de Beaurepaire's account of the Academy of Sciences and Belles Lettres established by him at Richmond. There is no further mention of this organization.

On February 19, 1790, a letter from Dr. Greenway containing "An account of a hill on the borders of North Carolina supposed formerly to have been a volcano" is recorded, and there is also a notice of "An account of a poisonous plant growing spontaneously in the southern part of Virginia."

On February 4, 1791, astronomical observations received from Rittenhouse enclosed others by Rev. Dr. Madison, President of the College of William and Mary.

On April 15, 1791, on motion by Thomas Jefferson, a select Committee (consisting of Jefferson and four others) was appointed to collect materials for forming the natural history of the Hessian fly, and the best means for its prevention or destruction "and whatever else relative to the same may be interesting to Agriculture."

On August 19, 1791, a curious piece of Indian sculpture, supposed to represent an Indian woman in labor, found near Cumberland river, Virginia, was presented by Mr. Jefferson.

On January 20, 1792, J. Rouelle presented (per W. Barton) his "Complete Treatise on the Mineral Waters of Virginia."

On March 2, 1792, David Thomas of Loudoun County presented by letter and note two specimens of impressions of *Echinus* or sea-nettle in limestone, presented by Mr. Peter Boyle of Georgia, per David Thomas.

On May 18, 1792, an account of some fossil shells discovered in Virginia, and additional facts concerning the Bursted Hill in North Carolina, were read out of a letter from Dr. Jas. Greenway to Dr. Barton.

On November 20, 1795, a paper on the barometrical measurement of the Blue Ridge, Warm Spring, and Alleghany Mountains in 1791, with a journal of observations by Jon. Williams, was read.

On August 19, 1796, Jefferson's letter to Rittenhouse (deceased) describing bones of extraordinary size found beyond the Blue Mountains in Virginia, "appearing to be of the Tyger-lion & Panther species" was read by Dr. Barton.

Thomas Jefferson was elected President of the American Philosophical Society on January 6, 1797. On February 10 his letter from Monticello dated January 28, "expressing in the most polite terms the sense he entertained of the Honour done him at the late election in choosing him President—with sundry other interesting particulars" was read. This letter was read again on February 17 and ordered on the minutes.

On March 10, 1797, Jefferson's memoire [*sic*] "On the Discovery of certain Bones of a Quadruped of the" [space of four lines left blank]. A resolution was passed ordering the memoir to be put in the hands of the Committee of Selection of Publications, drawings of the bones to be made by a proper person. Mr. Peale was requested to put the bones "in the best order for the Society's use."

On January 5, 1798, Jefferson was reelected President.

On January 19, 1798, Jefferson presented to the Society bones of the mammoth some time ago found in Virginia.

On April 20, 1798, Jefferson presented a hand threshing machine invented by T. C. Martin of Virginia "which he had procured to be made."

On May 4, 1798, a communication "On Magnetism" from Revd. James Madison, of Williamsburg, was referred to Dr. James. On the same date a paper on natural curiosities in Greenbriar County, "particularly of a tooth of a large non descript animal" from Mr. Beauvois was referred to Dr. Wistar. A "Description of a Mould Board of the least resistance, &c." by Mr. Jefferson was read and referred to Mr. Patterson.

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On June 1, 1798, Bishop Madison's piece on magnetism was reported worthy of publication and so ordered.

On December 21, 1798, a "Memoir on the Sand Hills of Cape Henry" by H. B. Latrobe was read and referred to S. H. Smith. Mr. Latrobe intends further communications. Thanks were ordered.

On January 4, 1799, Jefferson was again elected President.

On January 18, 1799, a supplement to Mr. Latrobe's paper on the sand hills of Virginia was presented and referred to S. H. Smith, with power to print. It was reported worthy of publication on February 1, and this was agreed to.

On December 27, 1799, Jefferson was reelected President, and resolutions were passed on the death of Washington.

Before the American Philosophical Society had elected more than a very few members from Virginia there was organized at Williamsburg on November 20, 1773, "The Virginia Society for the Promotion of Useful Knowledge." The charter of this society reads:

> Tis this day agreed at a meeting of the following persons that a society shall be instituted to be held at Williamsburgh this Monday after the 25 of . . . ety shall be call'd and known by the name of the Virginia Society for the Promotion of Useful Knowledge and we whose names are hereunto subscribed do agree to meet at some convenient place in Williamsburgh for forming such regulations as may be thought necessary to establish the said society, at the said appointed times. 2nd That the subjects to be discussed in the said society shall be comprehended under the following heads, viz., Geography, Natural History, Natural Philosophy, Agriculture, Practical Mathematics, Commerce, Physic, American History. 3d That no member shall be admitted in the society after this time, untill they have petition'd by themselves or some of the members now subscribing and are admitted by a majority of the members instituting this society and subscribe the terms agreed to by the society.

The signatures on the reverse side of the one page document are those of Theodorick Bland (who had formerly been a prominent member of the Virginia Club in Edinburgh), Chairman; Dabney Carr; John Page of Rosewell; Mann Page, Jr., Mannsfield; George Muter[n]; John Walker; James McClurg. John Clayton was elected the first President, and the Hon. John Page (then Lieutenant-Governor) was elected Vice-President.

John Walker was already a member of the American Philosophical Society which James McClurg joined in the year following, and Mann Page later.

The following notices regarding the activities of this society are taken from the *Virginia Gazette* published at Williamsburg.

Issue of April 21, 1774. The members of the society lately instituted for promoting useful knowledge are desired to attend at the Capital on Tuesday the 3rd of May, that being one of the Days appointed for their annual Meetings.

Issue of May 19, 1774. The Members of the Society for promoting useful Knowledge are desired to meet on Tuesday the 31st of this Instant.

Issue of May 26, 1774. The Members of the Society for promoting useful knowledge are desired to meet on Tuesday the 31st of this Instant.

Issue of June 9, 1774. The members of the Society for the Advancement of useful Knowledge are desired to meet at the Capitol on Wednesday the 15th Instant, at four o'Clock in the Afternoon.

Issue of June 16, 1774. Yesterday the Society for the Advancement of useful Knowledge met at the Capitol, when the Honourable John Page of Rosewell, was chosen President [John Clayton having died], George Wythe, Esq., Vice-President, Mr. James Madison, Professor of Natural Philosophy in the College of William & Mary, and the Reverend Mr. Robert Andrews of York Secretaries, David Jameson, Esq; Treasurer, and Mr. James Madison Curator.

A pecuniary Reward and Medal were voted to Mr. [John] Hobday [of Gloucester County] for his Model of a very ingenious and useful Machine for threshing out Wheat.

Doctor Franklin and Doctor Lettsom of London, the Reverend Thomas Baldwin, and John Baldwin, Esq; of Chester, in England, Doctor Smith, Provost of the College, Doctor Morgan, Doctor Rush, and Mr. Rittenhouse, of Philadelphia, Edward Fay, Esq; of New York, Doctor Steward of Bladensburg, Maryland, and Doctor Smibert of Boston were chosen corresponding members.

Issue of July 28, 1774. The publick would be much obliged to these Gentlemen of the Faculty, who have an Opportunity of examining into the Nature of the Distemper amongst the HORNED CATTLE (which so generally prevails at this Season of the Year) for their Opinion relative thereto, and to publish what they think the most

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probable Method of relieving the Sick or preventing the Disease.

In its early years the society seems to have been well received by the people of the Colony; but after 1774 there are few published notices of it, although it appears to have kept up an organization of some sort for a considerable time.

Among the letters of Jefferson is one that he wrote in 1787 in answer to one from John Page, who had urged him to accept the presidency. Jefferson wrote that "he should feel himself out of his true place to stand before McClurg." Dr. James McClurg was probably president at that time.

John Page and Thomas Jefferson were close friends. In their student days at William and Mary their interests were very similar, and they shared their ideas and confidences. Page, who was Lieutenant Governor under Patrick Henry and later (1802-'05) Governor, spent much of his time in scientific investigations. With his friend David Jameson he was interested in astronomy, and made experiments in the accurate measurement of the fall of rain and dew. Because of his interest in astronomy, and especially his calculations of an eclipse of the sun, his friends called him "John Partridge" after the noted almanac maker in Scotland. He also suggested, as early as 1779, the identity of magnetism and electricity.

The Virginia Society for the Promotion of Useful Knowledge was beset with many difficulties arising from the disturbed social conditions attendant upon the Revolution and from other causes. Furthermore, it came into competition with the American Philosophical Society in Philadelphia, to which several of its outstanding members belonged.

Immediately after the Revolution science was in high favor among the people of Virginia. Many scattered notes testify to this. As an illustration, we read in the *Virginia Gazette* for August 22, 1777, that

> On Friday last, the 15th of August, being the day of the foundation of William and Mary College, after prayer and a sermon by Mr. Madison, recommending industry in the pursuit of science, and setting forth the advantages with which it might here be prosecuted, two ovations were delivered—the first in Latin by Mr. Heath, upon the utility of sciences; the other in English by Mr. William Nelson in which he discussed, to the great satisfaction of many learned gentlemen who favored the college with their presence, the question, What form of government is most favorable to public virtue and the arts and sciences?

As an illustration of the appreciation of the importance of science on the part of the people of the State as a whole I may mention that Transylvania University in Lexington, Kentucky, was founded by an act passed by the General Assembly of Virginia in May, 1780, "to vest certain escheated lands in the County of Kentucke in trustee for a public school." The preamble states that this school was to be for the benefit of "those remote citizens, whose situation in a barbarous neighborhood and a savage intercourse might otherwise render unfriendly to science."

Jefferson's "Notes on the State of Virginia" was the first comprehensive treatise to be published on any section of the United States. In it were discussed the boundaries of the State, the rivers, the sea-ports, the mountains, the cascades, the mineral, vegetable, and animal productions, climate, population, military force, marine force, aborigines, etc. It was the precursor of the great library of more or less similar scientific reports that have since been issued by the State and Federal governments. Measured by its influence, this was the most important scientific work published in America up to this time.

The first American edition of this book was published in Philadelphia in 1788. In the *Virginia Independent Chronicle* (Richmond) for Wednesday, December 12, 1787, we read

> The work will be comprised in a handsome octavo volume, with an elegant type, and good paper, and delivered to the subscribers neatly bound and lettered at the very moderate rate of one dollar. The price to non-subscribers will be seven shillings and six pence Virginia currency. . . . Subscriptions are taken in at Mr. Davis's Printing-Office in Richmond, where a specimen of the work is left for inspection.

Jefferson was always quick to defend science in all its branches against any form of disparagement. In a letter to President Madison of William and Mary College he wrote:

> Speaking one day with M. de Buffon on the present ardor of chemical inquiry, he affected to consider chemistry but as cookery, and to place the toils of the laboratory on a footing with those of the kitchen. *I* think it, on the contrary, among the most useful of sciences and *big* with future discoveries for the utility and safety of the human race.

It was the scientific foresight of Jefferson so manifest in his letters that led him to advocate so vigor-

ously the idea that science would be the cornerstone of our Republic. In 1789 he wrote to President Willard of Harvard:

> What a field we have at our doors to signalize ourselves in. The botany of America is far from being exhausted, its mineralogy is untouched, and its natural history or zoology totally mistaken and misrepresented. . . . It is for such institutions as that over which you preside so worthily, Sir, to do justice to our country, its productions, and its genius. It is the work to which the young men you are forming should lay their hands. We have spent the prime of our lives in procuring them the precious blessings of liberty. Let them spend theirs in showing that it is the great parent of science and virtue, and that a nation will be great in both always as it is free.

So far as science is concerned, the Colonial period in Virginia reached its culmination, and its end, in the personality and in the spirit of Thomas Jefferson, one of the most versatile, and certainly the most influential, of our American scientific men.

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IS SOCIALIZED MEDICINE THE NEXT STEP?

HAROLD W. POTTER, M. D., F. A. C. P.,
Newport News, Virginia

The time may not be far distant when our colleagues in the District of Columbia will appeal to us for support in their battle to prevent the legalization of social medicine.

Probably very few of the members of the medical profession in Virginia know the details of the struggle in which the District of Columbia Medical Society is engaged at this moment.

Since about the first of November there has been in operation in Washington a form of socialized medicine bearing the name of "Group Health Association Incorporated."

Fifty thousands dollars has been allocated by the H.O.L.C. to insure its operation. Patients are being treated at the Group's clinic daily, and monies are being received according to the pre-payment plan for medical care.

This plan may be summarized by quoting from the By-Laws of the "Group Health Association Incorporated" as revised October 25, 1937.[1]

"ARTICLE II.

"MEMBERSHIP

"Section 1. **The Corporation shall have no capital stock but shall be an Association controlled by its members. The membership of this Corporation shall be composed solely of civil employees of the executive branch of the United States Government Service; provided, however, that in case persons other than employees of the Federal Home Loan Bank Board and agencies under its direction shall be designated as eligible for membership, such action shall first have approval of a majority of the Board of Trustees."**

The above section reveals that the membership shall be civil employees of the Federal Government executive branch. The reason for the organization of the Corporation is said to have been an effort to cut down the time lost on account of illness of civil employees. It is not clear just how this Group Health Association is going to diminish time lost due to ill health, any more efficiently than private practitioners have done in the past.

What does membership in Group Health cost, and what does the member get for his payment?

I quote from Article VII of the By-Laws.[1]

"DUES.

"Section 1. **There shall be two classes of membership, i. e., (1) Family membership; and (2) Individual membership. Family membership shall include married or single persons with dependents as hereinafter defined, and the dues for membership of such class shall be $3.30 per month. Individual membership shall include married or single members having no declared dependents, and the dues for membership of such class shall be $2.20 per month."**

Thus for $39.60 per year in the first class and $26.40 for the second class, this Association proposes to furnish an almost complete medical and hospital service to its members and their families.

The benefits which are offered to the members will be best explained by further quotations from the By-Laws.[1]

"ARTICLE X.

"BENEFITS.

"Section 1. **The Medical service to be rendered to members and dependents by the Corporation shall be as follows: Medical and surgical examinations and treatments, including such examinations in special departments as refractions of eyes, laboratory tests, X-ray examinations, surgical operations, confinement cases and professional consultations, nursing and ambulance facilities, house calls and hospitalization in a semi-private room (two bedroom), or a private room, limited in either case to a period not to exceed twenty-one days for any one illness; provided, however, that each member desiring to occupy a private room shall reimburse the Corporation for so much of the cost of such room as shall exceed the sum of $4.00 per day; provided, further, that such member shall make such payments to assure such reimbursement as the Corporation shall require, and provided that the benefits provided outside of the territory of the Association shall be limited to the provision of a hospital room for the time and as herein provided.**

"The extent that medical service relating to the foregoing items will be furnished to members shall be determined and prescribed by the Medical Director or his representatives in each individual case."

Section 2 of this Article X outlines the types of treatments which are not furnished by the corporation.[1]

"ARTICLE X.

"Section 2. **The following medical service will not be furnished by the Corporation:**

"1. Treatment of industrial accident cases.

"2. Surgery of the brain or nervous system.

"3. After the time that the Medical Director recommends confinement in an institution in mental, tubercular, drug or alcoholic addiction cases."

Time will not permit quotations of all of the sections of the By-Laws but it may be seen from the above sections that a fairly complete medical service is promised. Another section outlines certain things for which members are charged. Among these are drugs, dental work, blood transfusions and oxygen tents and materials.

It is proposed to treat venereal disease at the rate of fifty cents ($.50) per treatment.

Necessary house calls are to be answered within a radius of ten miles from the District of Columbia line except that the Medical Director may provide for house calls not exceeding twenty miles.

The Group Health Association Incorporated has been in operation a few weeks. A staff of doctors has been employed. A Medical Director has also been employed.

The District of Columbia Medical Society, of course, has discouraged any of its members taking employment under the Corporation.

The Boards of most of the hospitals in Washington have informed the Corporation that the hospital

can allow the courtesy of the hospital only to members of the hospital staff. This will probably only be a slight obstacle, since it would seem that the H.O.L.C. has allocated $50,000 to start this project, and, if hospitals are not available, will probably arrange for hospitalization in a government hospital, or build one.

It is also probable that if this plan works successfully in the H.O.L.C., it will be taken up by the other Government departments in Washington.

If this plan works and other departments undertake it, private practice in Washington will be doomed. This is true since a large part of the population there either is employed in the Federal service or are dependents of an employee.

If private practice is destroyed in the District of Columbia, the legalization of social medicine throughout the nation will be the next step.

After the above outline of the set-up plan, the question naturally follows: What is the District of Columbia Medical Society doing to protect private practice?

At present, the situation is that the Medical Society has filed a brief with Corporation Counsel for the District of Columbia and the District Attorney charging the Group Health Association Incorporated with practicing medicine illegally, and operating an insurance clinic without a charter or having submitted their plan to the Insurance Board of the District of Columbia.

The American Medical Association, while it has published a concept by Dr. Woodward on this plan, has taken the attitude that the problem here presented was a local one.

Perhaps it is, at the moment, a local problem, but how long can the members of the medical profession take the attitude that any problem of this kind will not affect the entire profession?

To make the task of the District Society more difficult, there are some recognized members of the medical fraternity who feel that this type of medical set-up is what the country needs. Dr. Richard Cabot, Professor of Clinical Medicine Emeritus, Professor of Social Ethics Emeritus, Harvard University, in a speech before the meeting of the Group Health Association at the Mayflower Hotel, Washington, D. C., October 30, 1937, opened his address with the following words:[2]

"The gist of what I have to say about the value of your Group Health Association can be put into five words—better doctoring for less money."

One cannot help but wonder where Dr. Cabot can find evidence to support such a statement.

He states further along in his speech, and I quote again from the same address:[2]

"The greatest single curse in medicine is the curse of unnecessary operations, and there would be fewer of them if the Doctor got the same salary whether he operated or not. We shall not get away from them any other way than by this scheme."

The above statement is an unjust statement in criticism of the men devoting their lives to surgery. I have never known a surgeon who would allow the question of payment for an operation sway his decision.

I do not believe the Group Health scheme will make for better surgical judgment.

In closing his speech, Dr. Cabot's words are as follows:[2]

"Finally, this is such an obviously good thing that some years hence when we look back to the beginning we shall say 'How extraordinary it was that we waited to do this until 1937. The thing was so perfectly obvious all the time, why didn't we do it before?' "

With advocates within the profession, who are ready to support the advent of social medicine, and with financial backing already allocated, the Group Health Association is off to an apparently good start.

The only organization to combat the scheme is our neighboring District of Columbia Medical Society. If the legal battle in the District Court fails, we in Virginia will probably be asked to give support through our representative in Congress.

It is my hope that this rather sketchy outline of the problem may stimulate its readers to investigate more fully the problem that our Washington confreres have now before them.

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PREMATURE SEPARATION OF THE PLACENTA—A STUDY OF FIFTY-SIX CASES OCCURRING AT THE MEDICAL COLLEGE OF VIRGINIA HOSPITALS.

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Premature separation of the placenta was first described by Louise Bourgois, 1609. Holmes called it "ablatio placenta"; DeLee refers to it as "abruptio placenta", and the severe form described by Couvelaire is known as "uteroplacental apoplexy".

The incidence varies greatly according to the statistics studied: Polak, one in three hundred and five cases; Davis and McGee, one in three hundred and fifty-seven cases, and at the Medical College of Virginia the occurrence of complete separation averaged one to five hundred and thirty-four deliveries. Multiparity appears to be a predisposing factor and was found to be an associated condition in seven, or seventy per cent, of the cases of complete separation, and thirty-nine, or eighty-four and eight-tenths per cent of the cases of partial separation.

The etiology is unknown, early improper attachment of the anchoring villi, toxins elaborated by infarct formation (Young) and trauma having been suggested as possible causes. Hofbauer produced similar changes in animals with histamine injections, and Browne (1928) produced nephritis in animals and caused premature separation of the placenta by injecting B-pyocyaneus. Toxemia of pregnancy is the probable cause and seven, or seventy per cent, of the severe group, and twelve, or twenty-six and nine-one-hundredths per cent, of the mild group had an associated toxemia; only one case, a patient with nephritis, revealed excessive infarct formation of the placenta. Two cases having partial separation gave histories of trauma and one followed artificial rupture of the membranes because of polyhydramnios.

TABLE I.

	Primiparae	Multiparae	Colored	White	Associated Toxemia	Maternal Mortality	Fetal Mortality
Severe	3	7	10	0	7	0	10
Mild	7	39	33	13	11	1	37

Following extensive separation blood rapidly infiltrates the uterine wall, giving to the uterus a purplish, coppery mottled appearance with edema and dissociation of the muscle fibres, edema of the tubes, ovaries and broad ligaments, and not infrequently dark blood in the peritoneal cavity.

TABLE II.

Duration of Pregnancy	Severe	Mild
Under 28 weeks	3	8
28-36 weeks	1	16
36-40 weeks	6	22

The diagnosis of sudden extensive separation is not difficult and usually occurs during the last trimester of pregnancy; however, eight cases, or seventeen and thirty-nine hundredths per cent, of partial separation, and three, or thirty per cent, of complete separation occurred before the last trimester. Sudden severe abdominal pain followed by vaginal bleeding (if seen after sufficient time for clot formation, the discharge may be serous as a result of clot formation in the vagina), exquisite tenderness and slight enlargement of the abdomen, disappearance of fetal heart sounds and movements and, if seen soon after the separation, signs of shock may be out of proportion to the amount of blood lost. Very rarely (1 to 15,000 deliveries reported by Williams—none in this series) hemorrhage may be concealed with no vaginal bleeding. Anemia is always an outstanding late symptom, the hemoglobin averaging fifty and nine-tenths per cent and the red blood cells 2,801,000 in the ten severe cases. Vaginal examination reveals the membranes, if intact, and presenting part under increased tension. The absence of placental tissue near the internal os differentiates this condition from placenta previa.

TABLE III.
HEMOGLOBIN AND RED BLOOD CELL ESTIMATION IN THE SEVERE GROUP

Hemoglobin	*Red Blood Cells*
44	2,520,000
70	3,600,000
66	3,720,000
40	2,800,000
66	3,450,000
40	3,600,000
37	1,570,000
46	2,360,000
49	1,870,000
51	2,520,000
Average 50.9%	Average 2,801,000

Partial separation occurs as a rule after the onset of labor, and at the time of separation contractions

increase in frequency and intensity, vaginal bleeding increases, and fetal heart sounds become irregular or disappear.

The fetal mortality rate is necessarily high, being one hundred per cent in cases of complete separation, and in cases of partial separation will increase with increased amount of separation. Forty-six cases of partial separation resulted in thirty-seven, or eighty and forty-three hundredths per cent, fetal deaths. Viable babies with fifty per cent or more of separation is quite rare. Maternal mortality varies from two to ten per cent. One patient in this group entered the admitting room in profound shock, and was said by the referring physician to have had a central placenta previa and premature separation of the placenta. The patient delivered spontaneously a few minutes after admission and died two hours later as a result of continued shock. There was an uncorrected maternal mortality rate of two and seventeen hundredths per cent in the mild group and no deaths in the severe group.

There is much divergence of opinion as to the treatment of premature separation; however, the immediate treatment is that for shock and hemorrhage. Operation for severe cases is definitely agreed to be the procedure of choice. If the typical picture of utero-placental apoplexy is present the uterus should be removed even though hemorrhage may not be present at the time of operation, as there is no way of definitely determining the extent of damage to the uterine muscle and whether or not hemorrhage will later occur. This will occasionally result in the needless sacrifice of a uterus; however, attempting to preserve these uteri will occasionally sacrifice a life and the former is distinctly better. Each of the ten cases of complete separation was delivered by classical Caesarean section, followed by supracervical hysterectomy. Treatment for partial separation will depend upon the progress of labor, condition of the cervix, absence or presence of infection and the general condition of the patient. Manual dilatation, incision of the cervix, the use of bags, version and extraction and difficult forceps should not be used. Better results are obtained if the membranes are ruptured, to allow the uterus to contract down more closely around the baby so as to help decrease the bleeding and to facilitate labor. Spontaneous delivery is desired and if increased bleeding follows delivery of the baby the placenta should be removed quickly, manually if necessary, and the uterus packed tightly, being particularly careful to pack the fundus completely in order to prevent bleeding behind the pack. Intravenous fluids and transfusions are given if hemorrhage is profuse or there are signs of shock.

TABLE IV.

METHODS OF DELIVERY

Caesarean section, followed by supracervical hysterectomy	10
Spontaneous	37
Forceps	4
Breech extraction	4
Version and extraction (prolapse of arm)	1

SUMMARY

1. Multiparity and toxemia are associated conditions in a high percentage of cases of premature separation of the placenta.

II. Premature separation of the placenta may occur in apparently normal pregnant individuals.

III. Trauma is seldom an etiological condition.

IV. Unless seen soon after the separation, shock may not be a prominent symptom and should not influence one to refrain from active treatment. Patients rarely die from hemorrhage at the time of the initial separation (Rucker).

V. Anemia and vaginal bleeding are constant late findings.

VI. Partial separation should be treated conservatively, allowing the patient to deliver spontaneously, being ready to combat post-partum hemorrhage and shock with uterine packing, intravenous fluids, etc.

VII. Complete or extensive separation should be treated by supracervical hysterectomy so as to prevent subsequent hemorrhage.

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XUM

PRIMARY MASTOIDITIS—REPORT OF A CASE.*

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Newport News, Va.

Primary mastoiditis was not recognized as a clinical entity in the training of a number of us who are present; in fact, few have admitted the possibility of such a condition. Upon review of the literature one will find such a dearth of material as might raise a question of the existence of primary mastoiditis. On the other hand, are all such cases diagnosed? It is this latter thought that prompts us to report a case which raises a question as to whether or not this is a neglected subject, and it is our hope we may stimulate interest in the hunt for such a possibility when we are confronted with vague ear symptoms.

The usual symptoms of middle ear involvement, constant discharge from the auditory canal, associated with sagging of the postero-superior wall, together with reduced hearing and elevated temperature, may be absent when mastoiditis is present as an anomaly.

According to McLoone,[1] extensive pathological changes are encountered without alarming clinical symptoms, the disease may occur without apparent middle ear involvement, and pain may be altogether lacking. Tenderness on pressure over the mastoid with absence of swelling is often noted, and sagging of the canal wall as well as fever are usually absent in atypical mastoiditis. Hempstead[2], Perkins,[3] West[4] and others have reported cases of mastoiditis without apparent middle ear involvement. The only cases of frank primary mastoiditis we seem to find are reported by S. J. Kopetzky[5] and R. Almour, three cases which were definitely proven.

Case: A well-developed white man, forty-seven years old, World War veteran, personal and family history good, filling station operative. He was sent to the hospital, entering February 9, 1937, with a tentative diagnosis of hysteria, dizzy spells, headache and ear disease. His home is distant some hundred or so miles in another State. Complete physical examination revealed heart, lungs, and kidneys negative; slight thyroid enlargement; dental caries with pyorrhoea; eye-grounds normal; pupils equal and reacted to light and accommodation; vision good, bilateral; hearing normal, bilateral. The left ear was normal on inspection. The right ear revealed three small stab wounds on the posterior wall of the auditory canal through the skin near the drum margin. The drum was normal in color and position except redness on the posterior border nearest to the stab wounds, fading toward the center. The canal was carefully cleaned with alcohol and a dressing applied. After twenty-four hours these wounds had about healed, and soreness from which he complained had subsided. The redness of the drum margin being still present, we made a free incision along the posterior margin through the drum, but this revealed no pus or fluid, or anything abnormal in the middle ear. This wound healed in approximately twelve hours with no diminution of hearing; the hearing remained normal throughout his stay. He said that several days before his coming to us a doctor in his home community lanced his ear three times and told him he could get no pus or fluid except a little blood; that there was something out of the ordinary the matter with him, for which reason he came to the hospital. There was no swelling, redness or discoloration about the face, head, or neck. The skin on the right side of head and neck was acutely sensitive to touch throughout the entire area from the clavicle to vertex and from symphysis mandibulae to occiput. A light touch, even a fold of bed sheet touching the area would apparently cause severe pain. Lightly touching the skin over the mastoid area would cause an "ouch"; but holding the finger in position fifteen seconds the pain would disappear, even under firm pressure. This phenomenon was present in any portion of the area above described. X-ray films did not reveal anything of value. He slept well through the night but was highly neurotic and non-cooperative, through the day-time making himself a nuisance and a most disturbing factor to the other patients. He had a fixed idea that he was going to have mastoiditis and die, giving his reason that two of his children had suffered with the disease and both promptly died following operation.

Temperature was normal and remained so throughout his stay, excepting a rise to 101 for a

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brief period on two occasions, each instance following an exaggerated hysterical spell. Average temperature was 98.1.

Laboratory Studies: Urinalysis revealed no pathology. Wassermann negative; Kahn negative. Blood chemistry N. P. N. 36; creatinin 1.2; hemoglobin 85; red cells 4,350,000; white cells 11,250; polys 72; lymphocytes 22; monocytes 2; eosinophiles 4. This remained about as above until the early morning of February 15th, six days after entering the hospital, when he was observed on awakening to be very quiet, and taking little interest in his surroundings. When questioned, he would say "I feel awful dizzy," and would not volunteer any information. He had a septic look. A blood count made at 8 A. M. revealed white cells 2,700; polys 22; lymphocytes 64; monocytes 12; eosinophiles 2. At 11 A. M., two different laboratory technicians took specimens and the result was counted by three separate counters, the unanimous result being white cells below 2,500. Up till this time the patient had rejected emphatically any suggestion of operation; also three surgeons and three internists, all experienced clinicians, advised against operation until this grave blood picture presented itself, when each advised that operation would hasten the end. Thus each of these consultants were most emphatic in opposition to any operation. It was late in the afternoon, after telling the patient repeatedly there were grave changes in his blood as revealed by the laboratory studies, and there were probabilities of an early demise, that he consented, giving his reasons that he knew he was going to die, and by the ether route would be painless. So he was taken to the operating table at 6:30 P. M., firmly believing he was going to sleep, not to awaken till "Gabriel sounds his trumpet." We confess it required Spartan courage to proceed under such circumstances.

The cellular portion of the mastoid was shallow. Removal of the cortex revealed the cells, antrum and process as one cavity, the content of which was a yellow semi-solid mass having the appearance of an oyster fattened in fresh water, the mass when lifted from the cavity proving to be "coagulated pus," if such a term be allowable. Unfortunately the specimen failed to reach the laboratory for bacterial study. The floor and walls of the cavity, which were about one centimeter in depth, seemed perfectly healthy. There was no communication between the cellular structure of the mastoid and the middle ear. No curetting or "burring" of the bone was necessary, and bleeding was slight; the cavity was lightly filled with iodoform wicking and the upper portion of the wound closed with metal sutures; a simple dressing was applied and the patient put to bed. In one hour he awoke as if from natural sleep and said, "I am well, I have no dizziness, I am hungry." The gauze wick was removed in two days and was not replaced; a liberal diet was fed him; also liver extract was used intramuscularly until February 27th, when his white blood count was 8,000. The wound had healed by March 9th, twenty-one days after operation. His convalescence was smooth and his gratitude profound.

We confess that we would not have operated had not the blood picture appeared,—dropping of the white count from 11,000 to 2,500 over-night seemed to us to indicate that delay would be dangerous. It is noteworthy his "Dr. Jekyl and Mr. Hyde" complex, one of the most trying of patients, changed to one of the best behaved in so short a space of time.

Is it possible that primary mastoid is not so rare as we were led to believe? Have not all of us had patients to die, leaving us to wonder if they would have been given a chance to live had we risked our judgment in the premises when we were dealing with something that was atypical?

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PRIMARY CARCINOMA OF THE LUNG.—REPORT OF FIVE CASES AT U. S. MARINE HOSPITAL, NORFOLK, VIRGINIA.*

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The reason for reporting these five cases of primary bronchogenic carcinoma occurring among the annual admissions of a 300-bed hospital is not because this is a rare disease, but on the contrary as further evidence of its increasing frequency. That ours was not an unusual run of cases is manifested by the recent report of a similar series at the Ellis Island Marine Hospital by Arenberg and Ginsberg.[1] Once regarded as a clinical rarity, it may now be considered as one of the major chest diseases. A review of the literature shows that this change has taken place only within the last two decades. Prior to that time primary pulmonary neoplasms comprised less than 1 per cent of all carcinomas, whereas at present they form from 7 to 10 per cent of them as reported in various parts of the world. In view of this the occurrence of our five cases among an annual admission of 3,000 patients is not entirely surprising. They constituted 33 per cent of fifteen post-mortem malignancies out of a total of seventy-three autopsies performed in this hospital during the current year.

CASE REPORTS

(Only pertinent data are included.)

Case 1.—C. M., white male, fifty-seven-year-old seaman, who smoked ten or more cigarettes a day, was admitted to the hospital March 13, 1936, and died on April 30, 1936.

History: Chief complaint was "pain in right chest." In June, 1935, patient fell against the rail of his ship, striking his right chest a rather severe blow. The accident was followed by a dull aching pain, which was not severe enough to prevent his working. Early in December, 1935, approximately six months after the injury, the patient contracted what he thought was a cold and began coughing. The pain in his chest became more severe and soon he was expectorating a bloody sputum. In January the patient noticed that he became short of breath and could not lie on his left side because of dyspnea. The pain and cough continued and his sputum contained variable amounts of blood. From the onset of the cough he grew progressively weaker and had a diminishing appetite. One week prior to admission his right-hand and forearm began to swell.

Examination: A well-developed, poorly-nourished, white male adult of five feet eleven inches, weighing 140 pounds. Usual weight had been 170 pounds. The general appearance is that of respiratory distress with dyspnea and cyanosis and edema of face and right upper extremity. The veins of the neck are swollen. Chest: Flatness over lower right chest extending to the fourth dorsal spine and the clavicle. Marked restriction of motion of right chest. Heart and trachea displaced to the left. Breath sounds absent over the right lung and exaggerated vesicular over the entire left. X-ray examination shows entire right chest opaque with displacement of heart and trachea to left as from massive pleural effusion. Film following aspiration of fluid and induction of pneumothorax shows the right lung to be consolidated and the impression is that of carcinoma. Laboratory examination: Wassermann and Kahn negative. Urine negative except for trace of albumen. Erythrocyte count 3,490,000 with 68 per cent hemoglobin, leucocyte count 12,000 with 77 per cent neutrophiles, 12 per cent small mononuclears and 11 per cent large mononuclears. The sputum is negative for tubercle bacilli and no cancer cells are found in it. The aspirated pleural exudate sedimented, fixed, sectioned and stained showed a cytology more suggestive of a malignant than of an inflammatory process.

Course: Steady, down-hill course with constant complaint of pains in chest necessitating administration of narcotics. Edema of face and right upper extremity became more pronounced and the cyanosis of these parts increased. The veins of the neck and

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right shoulder gridles became greatly dilated and those of chest and abdomen were also distended. Dyspnea became more marked and there was evidence of pressure about the superior mediastinum. The patient died with the development of pulmonary edema.

Autopsy: The primary carcinoma was represented by a large mass embedding the right main bronchus. Many tumor nodes were disseminated throughout the right lung with the exception of its base. The central portions of the neoplasmic masses were frequently necrotic and liquefied. Secondary and metastatic nodes were extensive. They heavily invaded the right pleura and mediastinum, including the pericardium and the adventitia of the aorta. Further mestastases were found in the left lung, liver, pancreas, left adrenal body and the kidney and in the retroperitoneal lymphnodes. The microscopic structure was that of an undifferentiated carcinoma, "oat cell" variety.

Complications were: Empyema of the right chest and broncho-pneumonia of the left lower lobe. A sclerosis of the coronary arteries was also found.

Case 2.—W. J., white male, forty-nine years of age, cabinet maker, smoked excessively over two packages of cigarettes a day. He was admitted to the hospital on August 4, 1936, and died September 22, 1936.

History: Chief complaint was "pain in right shoulder blade." Patient states that on June 1, 1936, all of his teeth were extracted. About a week following this he developed a pain in the upper right chest. A few days later he developed a cough and consulted a physician. The pain has been more or less constant since onset. The cough soon became productive of considerable foul sputum. About a week before admission he noticed some blood in his sputum. For the last few weeks he has had night sweats and fever.

Examination shows an obese, rather pale adult male, who is acutely ill, lying semi-recumbent upon the left side. Height is a little above average and weight over 200 pounds. The patient coughs frequently and expectorates large quantities of purulent sputum. Chest examination shows limited motion on right side. There is dullness over the middle and upper lobes with bronchovesicular breathing and increased whispered voice and coarse rales and expiratory wheezes. The lower right lobe and left lung are clear. The X-ray examination shows the entire upper half of the right lung field obscured by a dense shadow. Serial X-ray films (some using deep penetration) shows a partial destruction of the fourth and fifth ribs posteriorly. This suggests a malignancy. Laboratory Examination: Blood Wassermann and Kahn negative. Erythrocytes 4,200,000 with 80 per cent hemoglobin, a leucocytosis of 14,950, with 63 per cent neutrophiles, 31 per cent lymphocytes, 2 per cent mononuclears and 1 per cent each of eosinophiles and basophiles. Sputum is negative for tubercle bacilli, Vincent's spirochetes, blastomycetes, other fungi or for cancer cells.

Course: Febrile course from 37° to 39° C. Therapeutic test with neoarsphenamine in the hope of benefiting a lung abscess and possible Vincent infection was unsuccessful. Bronchoscopy revealed mucopurulent material oozing from the upper right bronchus which obstructed the view. Frequent attempts at aspiration of pus from the pleural cavity were unsuccessful, excluding a possible encapsulated empyema. Finally an exploratory incision revealed a large carcinomatous mass which had perforated the chest wall posteriorly, destroying ribs and burrowing beneath the scapula. A frozen section of this tissue showed it to be a carcinoma. The patient died from exhaustion and toxemia.

Autopsy: The upper lobe of the right lung was the seat of a primary cancer. The entire lobe was transformed into a pinkish white tumor mass, broken down in its central portion into a large abscess. It infiltrated the chest wall, causing a marked erosion and partial destruction of the second to fifth ribs posteriorly as well as the bodies of the third to fifth thoracic vertebrae. Large mediastinal lymph nodes, invaded by the tumor, were also present. In addition, adhesive pleurisy, exudative bronchitis, fatty infiltration of the liver and subacute, toxic splenitis were found. Microscopically the neoplasm proved to be an undifferentiated cell carcinoma, round cell variety, which was quite anaplastic.

Case 3.—O. M., white male seaman, fifty-three years old, smoked two packages of cigarettes a day. He was admitted on September 5, 1936, and died on September 20, 1936.

History: Chief complaint was "shortness of breath." Patient states that about eight months ago he developed a chronic cough which grew progressively worse. Five months ago he noticed that he was becoming short of breath on exertion and was growing weaker. This became so severe that he had to quit working. For the last month or so he has

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had a constant, dull aching in his left chest. There has been only about ten pounds loss in weight. Cough has never been productive of much sputum and there has been no blood in it.

Examination: Shows a well-developed and only slightly under-nourished adult male. Height sixty-seven inches, weight 150 pounds. General appearance is that of marked dyspnea with slight cyanosis. Chest: Flatness over the entire left lung accompanied by absence of breath sounds and tactile fremitus. At extreme left apex there is bronchial breathing and coarse rales. The right lung is hyperresonant with exaggerated normal breath sounds. Practically no motion of left chest on respiration. There is an enlarged indurated supraclavicular gland on the left side. The X-ray examination showed the left hemithorax occupied by a dense homogeneous shadow and the heart seemed slightly shifted to right, giving the impression of a massive pleural effusion. Laboratory: Blood Wassermann and Kahn negative. Red blood cells number 5,190,000 and hemoglobin of 100 per cent. White blood cells number 11,100 with 76 per cent neutrophiles, 21 per cent lymphocytes, 1 per cent monocytes and 1 per cent eosinophiles. Urine entirely negative. Sputum negative for tubercle bacilli.

Course: Low febrile course. Repeated attempts at aspiration of pleural fluid failed and the impression was that the needle penetrated consolidated lung tissue. Biopsy of cervical lymph node showed its structure was wiped out by invasion of metastatic carcinoma cells. Palliative treatment with narcotics relieved the patient. On September 20, 1936, patient on attempting to get out of bed suddenly collapsed into coma and died shortly thereafter.

Autopsy: There was a primary carcinoma of the left lung, replacing the greater part of the upper lobe and much of the lower lobe. The left main bronchus was closely collared by the tumor mass. The nodes of the growth showed central necrotic and hemorrhagic areas. Due to the heavy malignant invasion, the left pleura presented a thickness of one-half cm. The mediastinal lymph-glands were extensively involved, particularly above the base of the heart. There was a metastatic carcinoma node in the left temporal lobe of the brain which probably accounted for the patient's sudden death. The microscopic picture was that of an undifferentiated cell carcinoma, round cell variety.

Case 4.—J. R. W., white male, forty-one years of age, a roofer, smoked about twenty cigarettes daily. He was admitted on August 4, 1936, and died August 18, 1936. He had been previously hospitalized for the same complaint from December 28, 1935, to April 24, 1936.

History: Chief complaint was "cough and shortness of breath." On October 14, 1935, the patient was in an automobile accident which resulted in an injury to his chest. Since then he has had pains in his right chest. He was able to continue work until two weeks prior to his first admission, when shortness of breath became too severe. For a month or more prior to taking to his bed he had noticed a progressive cough and he had had some shortness of breath and a feeling of progressive weakness. The cough has been non-productive. The pain in the chest is of a dull nature and has been more or less constant since onset. He has never expectorated any blood.

Examination: An adult male, white, well-developed and nourished. Height about five feet eight inches, weight 140 pounds. There is marked dyspnea and the respirations are abdominal in type. The patient coughs frequently but does not expectorate. The chest is flat over the lower right side with absence of breath sounds and vocal fremitus. There is marked restriction of movements on the right. Tenderness is present over the lower part of the right thoracic wall posteriorly. The heart is displaced to the left. X-ray examination shows a right pleural effusion with displacement of the mediastinum to the left. X-ray following aspiration and pneumothorax show the underlying lung to be dense. Laboratory: Wassermann and Kahn are strongly positive. (The patient had had a penile lesion in 1918 with inadequate treatment.) The urinalysis showed albumen and cast on first examination, which cleared up in later specimens. The red blood cells number 4,050,000 and the hemoglobin is 76 per cent. White blood cell count 14,950, with neutrophiles of 73 per cent, small mononuclears 17 per cent and monocytes 10 per cent. Aspirated pleural effusion is hemorrhagic on repeated taps. Its examination shows many erythrocytes, some leucocytes and epithelial cells. Special study fails to demonstrate any typical carcinomatous cells. Sputum is negative for tubercle bacilli and for malignant cytology. Guinea pigs inoculated with pleural fluid do not develop tuberculosis.

Course: Febrile at first. Repeated aspirations of the pleural effusion were necessary. These were

always hemorrhagic, suggesting cancer rather than tuberculosis. Pneumothorax was instituted to keep diseased lung collapsed. He was given specific antisyphilitic medication in form of bismuth and neoarsphenamine. On April 24, 1936, he was transferred to another hospital for further treatment. He was ambulatory and afebrile at the time. Weight was satisfactory. There was still some dyspnea and weakness and the main complaint was pain in the chest. His prognosis was given as poor. On August 4, 1936, he was re-admitted in a critical condition and died on August 18, 1936.

Autopsy: The right lung presented a diffuse, nodular type of carcinoma. It was collapsed to the size of two fists due to a pneumothorax and a large fibrino-hemorrhagic pleural exudate. Frequent tumor nodes had invaded the pleura. A microscopical study indicated a poorly differentiated adeno-carcinoma. The secondary masses of the growth were widely distributed to the mediastinal, axillary, cervical and peritoneal lymph glands; the right side of the diaphragm, the liver, the pancreas and the left adrenal body. There was an associated syphilitic aortitis.

Case 5.—N. L., white male, thirty-eight years old, seaman, smoked two packages of cigarettes daily. He was admitted on October 27, 1936, and died January 17, 1937.

History: Chief complaint was "pain in the back of my chest." Patient stated that he first noticed a pain in the back of his chest about a year ago. It has been more severe during the last month or two. He has had a dry "cigarette cough" for several months. His appetite has been poor for several months but he believes he has not lost over six pounds in weight. He knows that he is growing progressively weaker. There have been occasional night sweats in last three months.

Examination shows a fairly well-nourished white male, five feet eight inches in height, weighs 143 pounds. There is some limitation of motion of right side of chest. There is an area of impaired resonance from the fourth rib to the clavicle and in the interscapular region on the right. The breath sounds are diminished in this region. No rales are heard. The left lung is normal. The veins of the neck are distended, especially on the right side. The X-ray reveals a dense shadow the size of the palm of the hand, extending from the hilum into the midportion of right lung field. The impression is that of a primary carcinoma but tuberculosis and spirochetal and fungus infection must be ruled out. Laboratory Examination: Blood Wassermann and Kahn are negative. The urine is essentially negative. The sputum smears are negative for acid fast bacilli and cancer cells. A few specimens show an actinomycosis fungus. The National Institute of Health reports that these actinomycoses are of the non-pathogenic type frequently found in the mouth. Erythrocytes number 5,700,000 with 100 per cent hemoglobin. The leucocytes number 8,800 with 57 per cent neutrophiles, 32 per cent small mononuclears, 5 per cent large mononuclears, 6 per cent monocytes on admission. A leucocytosis of 17,000 with 82 per cent neutrophiles developed towards the end of the disease.

Course: The patient was studied as a possible primary pulmonary malignancy. Bronchoscopy on November 11, 1936, revealed no pathology in the right bronchi. Serial X-ray films at first showed very little change in the lung lesion, but towards the end there appeared a rapid spread with a rise of the right diaphragm which indicated hepatic metastasis. A needle puncture biopsy of the lung was done on December 28, 1936, but this failed to reveal carcinomatous tissue. The finding of actinomycotes in the sputum temporarily clouded the picture. Towards the end the pain in the chest became so severe narcotics were required for relief. Cough became productive of copious purulent material which occasionally contained blood. At this time there was a daily fever curve. The patient grew more dyspneic and cyanotic and the veins of the neck became greatly distended. The liver increased tremendously in size and its surface was distinctly nodular so that there was no doubt of the diagnosis of carcinoma of lungs with liver metastasis. Death was gradual from exhaustion.

Autopsy: There was a primary carcinoma in the upper lobe of the right lung. The grayish-white tumor mass had enveloped the right eparterial bronchus and spread to the inner half of the upper lobe, and to the distal end of the trachea. A very large secondary mass, showing central necrosis, filled out the mediastinum. The liver was greatly enlarged due to its invasion by numerous large malignant masses. Secondary metastases were also found in the left lung and both kidneys. Associated lesions were right serous pleural exudate, bilateral adhesive pleurisy, adhesive pericarditis and a bron-

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chopneumonia of the base of the right lung. Histological sections revealed the neoplasm to be an undifferentiated cell carcinoma.

N. B.:—T. M., age sixty-three, brother of patient C. M., Case No. 1, is at present a patient at U. S. Marine Hospital, Norfolk, with primary carcinoma of right lung. This diagnosis was made by laboratory examination of the pleural exudate which yielded a

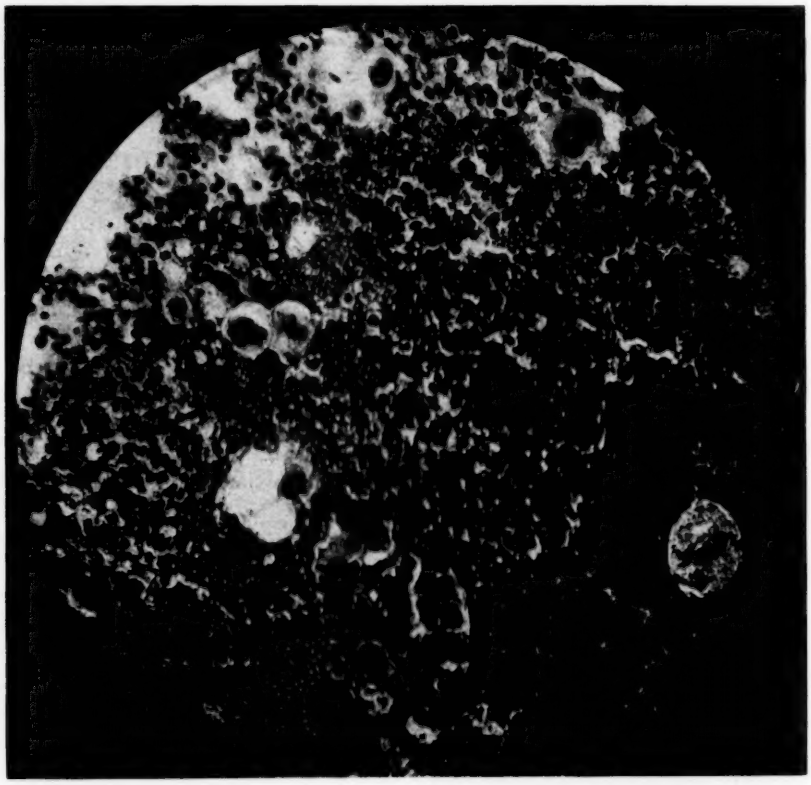

Figure T. M.—High power view of section of a paraffin embedded pleural fluid. Malignant cells are the large single or multinucleated cells. One at "X" shows mitosis. Patient died on June 9, 1937, and autopsy confirmed the diagnosis showing a squamous cell type of primary carcinoma of the lung.

characteristic cytology. He and two other suspicious cases serve to show that we still have lung cancer patients in our hospital (See Figure T. M.).

COMMENT

The importance of this subject warrants a brief discussion of points of clinical interest.

Prevalence: A review of the literature leaves no doubt of the increasing frequency of primary lung carcinoma. The only point of argument is whether this increase is relative or absolute. With prolonged span of life and with better diagnostic facilities an increase in all types of cancer can be expected. That the incidence of cancer of the lung is growing faster than other types of malignancies seems probable. Arkin[2] finds that it comprises at least 8 per cent of all types of carcinoma and ranks it second only to carcinoma of the gastro-intestinal tract.

Etiology: The majority of cases occur between forty and sixty years of age. Males predominate three to one over females. There seems to be no particular racial distribution.

Among the predisposing etiological factors various inflammatory lung diseases, such as influenza, bronchitis, bronchiectiasis and tuberculosis have been listed. Chronic irritation from the inhalation of smoke and dust has also been blamed. Arkin and Wagner[3] found 90 per cent of their patients were chronic smokers. All of our patients were heavy

smokers. Jaffe[4] believes syphilis, by causing a chronic irritation of the bronchial mucosa, may be of importance in the pathogenesis of lung cancer. Syphilis was present in 25 per cent of his cases. The inhalation of automobile exhaust gases and the emanations from tar on roads are other agents advanced to explain the growing incidence of pulmonary malignancies.

Pathology: It seems practical to classify primary lung cancers according to Olsen[5] and Brines and Kenning[6] into three main groups. The most frequent is the *hilar* or *bronchial carcinoma* which spreads from the hilus and is generally an undifferentiated cell carcinoma—round-celled or the so-called "oat-cell" carcinoma; the second most common is the *diffuse* or *lobar type,* which originates in the midlung region and microscopically usually proves to be a squamous cell carcinoma. The third group comprises the *peripheral* or *nodular type,* which spreads early to the pleura and structurally is usually an adeno-carcinoma. The prevailing opinion among pathologists at present is that all lung cancers are bronchogenic. All cases do not conform clearly to one of the above groups, but there are all gradations of mixed types.

Symptoms: The four cardinal symptoms are pain in the chest, cough, hemoptysis and dyspnea. The cough is the earliest symptom. At first dry and hacking, it later becomes productive of mucopurulent or hemorrhagic sputum. Frank hemoptysis is common. Pain in the chest of a dull constant type is perhaps the most characteristic complaint. It is due to involvement of the pleura or invasion of ribs or vertebrae.

Dyspnea and cyanosis are later symptoms. Loss of weight and weakness are seldom conspicuous. Fever and night sweats and leucocytosis are the rule.

The metastatic manifestations may completely mask the clinical picture. This should be especially remembered in cerebral metastases.

Diagnosis: Clinically a few pointers are of value. Always consider pulmonary new growths in cases of atypical tuberculosis with negative sputum, in recurrent pneumonias or chronic pneumonias, in unexplainable pulmonary abscess and empyemas and especially in hemorrhagic pleural effusions. A pleural effusion which remains bloody after repeated aspirations is more suggestive of cancer than tuberculosis.

Roentgenography and fluoroscopy of the chest are indicated whenever lung cancer is suspected. Serial X-ray films at appropriate intervals are of the greatest importance.

Bronchoscopy is most valuable early before the bronchogenic neoplasm has penetrated into the lungs or spread to the adjacent lymph nodes. This is the period when both the X-ray and physical signs are usually lacking.

Laboratory Methods: Only occasionally can cancer cells be demonstrated in the sputum since they are easily disintegrated in this material. It is nevertheless well to search for them in every suspicious case.

Tumor tissue can sometimes be obtained from the lung by a special diagnostic needle punch. This procedure is not without danger and cannot be recommended as a routine procedure.

Examination of aspirated pleural exudate for cancer cells has been found practical. The method used at this station for the paraffin embedding of body fluids and secreta is based on an outline by Eisenberg, *et al.*[7]

The biopsy of an enlarged cervical or axillary lymph gland will often serve as an easy means of diagnosis.

Treatment: Unless the diagnosis is made early the treatment must be palliative, narcotics being used when necessary to make the patient comfortable. Unfortunately this is the usual case, since the majority of patients seek medical advice only after their disease is far advanced.

Primary pulmonary neoplasms are known to be radio-resistant. All that can be expected from deep roentgenotherapy is some relief of pain and retardation in growth with prolongation of life for a short period.

When a case is diagnosed in its incipiency by means of the bronchoscope, it appears that the neoplasm may occasionally be completely removed through this instrument as reported by Jackson, Orton, Greene and Kernan.[8]

For the rare patient in whom an early diagnosis has been made before metastases have occurred a lobectomy offers some prospect of success, as shown by Sauerbruch, Edwards, Allen, Smith[8] and others. Pneumectomy, the excision of an entire lung, may be the operation of choice. Graham[9] was first to resort to this operation, followed by Overholt,[10] Lyle[11] and Reinhoff.[12]

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CONCLUSIONS

1. Always be on the lookout for primary cancer of the lung. It is not a rare disease and appears to be on the increase. It will then be more frequently diagnosed antemortem.

2. Improved bronchoscopy will be the key to early diagnosis. In more advanced cases serial X-ray films offer the greatest diagnostic assistance.

3. A good pathologist seeking cancer cells in sputum, pleural exudate, lung puncture tissue or lymph gland biopsy will often be the first to disclose the true nature of the patient's disability.

4. Treatment is still discouraging and the only ray of hope is further advance in thoracic surgery.

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THE TREATMENT OF HAYFEVER BY IONIZATION—CASE REPORTS.*

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From the records available it would appear that ionization has been used as a therapeutic agent for the past forty years. In the late nineties, Dr. Baber, an English physician, reported cases of nasal hydrorrhea which were successfully treated by its use, and it is safe to assume that these cases were of an allergic origin. To digress for a moment, Dr. John McCoy, of New York, reported at length on the treatment of chronic otitis media by zinc ionization of the middle ear. He claims a high percentage of cures in ears so treated, and his claims seem to be substantiated by others who have worked along the same line. Dr. Tsoong, of Shanghai, may be mentioned in connection with Dr. McCoy's claim; also, Dr. Asherson, of London, seems to have been particularly successful in clearing up chronic ears by this method of treatment.

Some fourteen years ago Dematriades demonstrated in the Vienna clinics a method of treating hyperesthetic rhinitis which he termed "iontophoresis," using at that time a nasal pack of cotton wool saturated with an electrolyte containing calcium salts, and into this pack he inserted a zinc electrode which was attached to the positive pole of a galvanic apparatus. Franklin, in England, later used a modification of this method and substituted a zinc solution in place of calcium with his nasal pack.

Much has been done in this country in the past decade to develop ionization in treating hayfever and allied conditions, and the work done along this line by Dr. Warwick, of Fort Worth, Texas, is certainly of a high order. Working along the lines developed by Franklin, he has placed at our disposal a machine for ionization which commends itself to the practical operator. He has improved the electrode and electrolyte solution by the addition of tin and cadmium, claiming less reaction when this combination of metals is used. In his first paper Dr. Warwick re-

*Read before the Richmond Eye, Ear, Nose and Throat Society, May, 1937.

ports a series of forty cases with cures in thirty-nine for from one to three years. Thirty-two of these patients needed only one treatment while the others required from two to three. Using the Warwick apparatus and technique, Dr. Alden, of St. Louis, has treated many cases, and was in his first report most enthusiastic about his cures. He went so far as to gather statistics from other men on 700 cases and, after a close study of these, reports cures in 80 per cent. Of the remaining 20 per cent, he claims 12 per cent were benefited, and 8 per cent received no benefit. In a later paper, however, Dr. Alden seems to have lost some of his enthusiasm for ionization in treating hayfever but still uses it for the more difficult cases.

Early in 1935 I acquired a Warwick outfit and began treating a few cases which had been coming to me at intervals for several years. Up to December, 1936, fifteen cases had been treated and the results had been very good. It is not my purpose to dwell upon diagnosis with reference to these cases which I shall report, because the majority of them were confirmed hayfever sufferers of long standing and had been given the usual treatment, such as nasal applications, pollen extracts, *et cetera.*

It is in order at this point to describe briefly the technique used in treating the ordinary case, this being based, of course, on the principles laid down by Dr. Warwick in his original article. Having determined that the patient is a hayfever sufferer, a careful examination of the nose is made. If there is marked obstruction such as that caused by a badly deviated septum, a submucous resection should be done. This is essential in order that the nasal pack and electrode can be properly placed. Ionization may be given six weeks after the operation. I might state here that in so far as mechanical blockage of the nose is concerned, it does not seem to be an important factor in producing hayfever, as the majority of cases treated were those in which the anatomy was good and a perfectly wide open nasal passage obtained after ionization.

The patient is given a three grain capsule of sodium amytal to be taken one hour before the time set for ionization. He is also given a prescription for four H. M. C. tablets, full strength, to have convenient in the event of reaction. Thus prepared, the side of the nose to be treated is fully anesthetized just as though a resection were to be performed. In addition, the area under the lower turbinate should be anesthetized and a small pack of the anesthetic solution should be placed high up in the untreated nostril. In my cases a solution of pantocain, 2 per cent, 45 minims, to which is added fifteen minims of adrenalin chloride 1:1000, left in fifteen minutes, has been most satisfactory. The patient is now ready for the pack and electrode.

One should be careful in packing the nose to see that the cottonoid strip saturated with the electrolyte solution comes in contact with the entire mucous membrane of the side to be treated back to the nasopharynx. The packing should be made in a systematic manner: first, a short strip inserted under the lower turbinal bone; then the floor of the nose back to the soft palate should be packed in a uniform manner up to the attachment of the lower turbinal bone. This should be snug. Next, the upper nasal chamber should be packed, starting back against the body of the sphenoid and filling in the space between the middle turbinate and the septum on down almost to the lower pack. The electrode should now be inserted between the upper and lower packs and a small strip packed along the top of the electrode to wedge it securely in the nose.

The patient is then ready for the machine. The arm pad, or negative electrode, is placed on the forearm opposite the side of the nose treated. The connections are made with the outlet cords, and the nasal pack button is pressed to see if pack has been properly placed. If the pack is properly placed the arrow on right side of panel board will come within shaded area of dial when pack button is pressed. If it does not come within this area, current should be turned on and treatment allowed to progress for one or two minutes, then the current should be turned off again and the pack button again pressed. The arrow will usually come within shaded area after this interval. If it does not, the nose should be repacked.

Upon the termination of the treatment (ten minutes) which is shown by the automatic timer in the middle of the panel board cutting off, the electrode should be removed from nose and the nasal packing removed. The membrane at this time has a whitish and shrunken appearance, and I have found that reaction is considerably lessened by mopping nupercain or pantocain ointment over the membranes at this stage. A cotton plug is placed in the nostril to be removed within two hours. The patient is instructed to take an H. M. C. tablet when discomfort begins and repeat in two hours, if necessary.

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Shortly after ionization the nasal mucous membrane begins to swell rapidly to complete occlusion and a thick white membrane forms. This begins to loosen about the third day and can either be blown out or removed on the fourth. Upon removing the membrane, the interior of the nose has a different appearance. Instead of the white edematous condition, it has a reddish and shrunken appearance and is in marked contrast to the untreated side. In order to check results on the cases treated in the past two years the following letter was mailed to fifteen patients, which is the number treated up to December, 1936, and a self-addressed card with questions as follows was enclosed with each letter.

Copy of Letter:

Dear Mrs. S.:

You were treated by Ionization in August, 1935, for hayfever. It is my purpose to determine, if possible, just what benefit patients so treated have received from this method of treatment. To this end I am asking that you answer the questions on the enclosed card and mail same back to me at your earliest convenience.

If you were not benefited let me know. If some benefit was obtained estimate same in your own words, or if cured simply say so.

Your cooperation and any comment you care to make will be appreciated.

Copy of Card—enclosed in letter:

How long had you had hayfever when treated?
What months during the year?
Results of treatment?
Comments:

Of the fifteen letters and cards sent out, thirteen cards were returned and they will be reported in the order in which they were received.

Case One. Mrs. S.

Question one: Duration of disease—*nine years.*
Question two: Months during year—*all year.*
Question three: Results—*cured.*
Comments: Since this treatment, still have asthma but it is milder and less frequent.

Case Two. Mrs. R.

Duration of disease: *Thirteen years.*
Months during year: *From July until freezing weather.*
Results of treatment: *Most satisfactory.*
Comments: Would advise any hayfever patient to submit to this treatment as it has freed me of an uncomfortable as well as an unsightly ailment.

Case Three. Mrs. C.

Duration of disease: *Twelve or fifteen years.*
Months during year: *Practically the year 'round.*
Results of treatment: I have been greatly benefited by the treatment but cannot say I am entirely cured as I have symptoms at times.

Case Four. Mrs. T.

Duration of disease: *Fifteen years.*
Months during year: *August, September and October.*
Results: In 1935 (year of treatment) I had hayfever just as badly as in the past but in 1936 had only three days of discomfort.
Comments: I feel that the treatment benefited me because other hayfever sufferers whom I know had just as severe attacks in 1936 as in the past.

Case Five. Miss S.

Duration of disease: *Fifteen or sixteen years.*
Months during year: *August, September and October.*
Results of treatment: *Relieved but not cured.*
Comments: The treatment cured my hayfever for the season, but I had it again the following August. My hayfever was just about as severe as before I took the treatment but did not last as long as before.

Case Six. Mrs. B.

Duration of disease: *Four years.*
Months during year: *Spring and fall.*
Results: Was entirely free of hayfever last fall.
Comments: Treatment has relieved a chronic sinus condition to a great extent; general health has been better.

Case Seven. Mr. S.

Duration of disease: *Four years.*
Months during year: *Approximately July first on to first frost.*
Results: Treatment has cured my eyes from burning and itching and my nose has been cured from being a water spigot. The continuous sneezing and feeling that I had taken a fresh cold has stopped.
Comments: Sincerely recommend that sufferers from hayfever take the Ionization treatment for quick and economical reasons. Unlike the treatment by serum when there are hundreds of causes, ionization I believe is almost sure.

Case Eight. Miss M.

Duration of disease: *Twelve years.*

Months during year: *Spring and summer.*

Results of treatment: I feel that I have been helped, but as it has not been long since that treatment I do not feel that I can say to what extent it has helped.

Case Nine. Mrs. R.

Duration of disease: *Twenty-five years.*

Months during year: *Anytime* if I should take a little cold.

Results: *Very satisfactory.* October and November I had several attacks but they were slight compared to former attacks. I have not sneezed since November, and I do not take cold easily.

Comments: I recommend the treatment to anyone suffering with hayfever.

Case Ten. Miss C.

Duration of disease: *About one year.*

Months during year: *Fall, winter and spring especially.*

Results: *Cured completely.*

Comments: Haven't been bothered with hayfever since treatment; would advise anyone who has this trouble to take the ionization treatment.

Case Eleven. Mr. J. S.

Duration of disease: *Three weeks.*

Months during year: *May and June.*

Results: *Very satisfactory.*

Comments: Condition cured. No recurrence of previous symptoms. Those three weeks of hayfever were intense suffering.

Case Twelve. Mr. G.

Duration of disease: *Eleven years.*

Months during year: *August.*

Results: *No appreciable result.*

Comments: Patient took treatment (only on one side of the nose) in September and his hayfever leaves late in September so really I don't think it had a fair chance. (Written by patient's father who is a physician.)

Case Thirteen. Miss D.

Duration of disease: *Two years.*

Months during year: *All year; not as severe in winter.*

Results: *Getting on fine.*

Comment: Condition was once so severe was unable to rest at night. Now am resting perfectly every night since treatment.

Case Fourteen. (Patient did not return card).

A letter received from this patient, however, a little more than a year after treatment states that she was entirely cured. This patient moved from city shortly after treatment, and I am quite sure she did not receive the letter and card which were sent her. She had had her hayfever for twenty-five years and she had reached the point that she could not lie down at night and was seldom free from symptoms.

Case Fifteen. (Did not return card).

This woman was badly in need of a submucous resection which she refused to have done. I am confident that had this been done, her result would have been much better.

SUMMARY

A brief review of the above cases is rather interesting. *Cases one, two, six, seven, nine, ten, eleven, thirteen* and *fourteen* state without reservations that they were cured by the treatment. In *case two* it was necessary to give the second ionization. This gives us a total of nine cures out of a possible fifteen. There is some doubt as to the benefit received in *cases three, four, five,* and *eight. Case three* presented a very bad picture. There was in addition to the allergic manifestation a very marked nasal obstruction with an old perforation in the septum. There was a severe infection in the right antrum and a mild infection in the left. There were polyps in the right nostril. Her sinuses were irrigated until cleared and the polyps removed. Her allergic symptoms persisted, however, and were promptly checked by ionization, although it was given with misgivings and much difficulty. She was almost symptom-free until February of this year when her son died of pneumonia and she underwent considerable exposure and worry throughout his illness. Her sinuses filled again and necessitated several washings. Just how much benefit she received from ionization is difficult to say. *Case four* stated she received little benefit the first season, but had only three days of discomfort the following year. In view of the fact that this patient had suffered from hayfever for fifteen consecutive years, one is justified in assuming that the poor results the first season could have been due to a sinus condition along with her hayfever and that her hayfever was cured by the ionization. *Case five* obtained immediate relief the first season, and she was active at the time of treatment but had a return of symptoms the following year. This case

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should by all means have a second ionization just as was done with *case two*. *Case eight* had a long period of sinus infection and had had several operations on the nose, including submucous resection, double windows and numerous bites on the middle turbinates. She had definite allergic symptoms as manifested by watering of the eyes, frequent sneezing attacks and a watery nasal discharge. Her statement is that she has been helped but does not consider the interval since treatment long enough to form an intelligent opinion as to benefits. *Case twelve*, a college student, badly allergic for a period of eleven years, with disturbing symptoms, was at college when first treatment was given and did not return for second, although father who is a physician advises that he is still an active hayfever sufferer. This case is of no value in so far as conclusions are concerned because he had only one side of the nose treated. *Case fifteen* did not return the card but from conversations both with patient and with her husband, I am inclined to think that she should be classed as a failure. She was badly in need of a submucous resection which she refused to have.

Medical Arts Building.

MANAGEMENT OF INOPERABLE CARCINOMATA.*

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Many so-called inoperable carcinomata are not inoperable at all. The large fixed carcinoma of the stomach with its involved adjacent glands is often changed into one which is easily removable by the simple expedient of gastro-jejunostomy which affords rest and drainage for the involved area. A formidable adherent cancer of the sigmoid becomes amenable to surgical excision six weeks after a strategically placed colostomy. A cancer involving the breast and the axillary glands may be removed late in the disease provided there is no lung metastasis. All of us who are experienced in cancer surgery have been surprised from time to time to have our effort rewarded after we have attacked an apparently hopeless case. There are, however, many cases which have progressed so far and have involved so many other structures that they must be placed in the category of inoperable carcinomata. I think that it would have been better for our patients and ourselves if we had not been impressed by our textbooks when we were students with the symptoms "pain and emaciation" in advanced cancer. I have not found pain to be an outstanding symptom in any stage of cancer, except when the physiological functions of hollow organs were interfered with or when the cancer was so placed that rest for the part could not be had. For instance, cancers of the stomach, bladder, and rectum are painful as soon as emptying is interfered with, and cancer of the tongue is painful early because it is difficult to secure rest from movement, swallowing, etc.

Emaciation is present when alimentation and absorption are not normal. The mechanical presence of the cancer or the odor and pain and drugs for its relief cause anorexia and consequent emaciation. I have seen patients die of cancer of the breast and of the skin where weight was not materially off.

During an experience of fourteen years while I was chief of staff of what is now Gallinger Hospital in Washington, I examined upwards of seventy thousand patients. Among them was a fair number of persons sent there from other hospitals to die from inoperable carcinomata. In those days (1914 to 1928) the City Hospital was the junk pile for the hospitals in the city and most of the five thousand patients sent there each year were the unwanted or hopeless cases which occurred in the city. I observed at that time many inoperable carcinomata of the breast, uterus, stomach, skin, tongue, rectum and lung. These patients were discouraged, weak, anemic, some in pain, and many giving off the odor of rotting flesh, which added to their misery and to the discomfort of those about them.

Their course in the hospital was about as follows: After means were taken to reduce or eliminate the odor and the pain and after the administration of iron injections and tonic medication, they would eat fairly well, become less discouraged, and appear to enjoy the sunshine and fresh air for awhile.

*Read before the Virginia, Maryland, and District of Columbia Medical Society, May 19, 1937, at Leesburg, Va.

Then, without apparent cause, they would have a gastro-intestinal upset, refuse food for days and become markedly weaker. Upon recovery from this illness they would fail to regain their lost ground, but would again take interest in life and their food. After a few days or weeks this cycle would be repeated each time leaving them weaker until unconsciousness and death would occur.

Palliative treatment will, of course, depend upon the location of the cancer except that all these patients require encouragement, fresh air, sunshine, and tonic medication.

Cancers located in the tongue often require gastrostomy for feeding and sometimes tracheotomy for laryngeal obstruction. Stomach cancers do better after gastro-enterostomy. Colon and rectal cancers are relieved by strategically placed enterostomies; bladder cancers, cystostomy with abdominal drainage.

Cancers involving large nerve trunks or areas which cannot be treated otherwise require nerve block, either near the cancer or posterior to the spinal cord where they enter to carry sensory impulses to the brain.

Some of the most malodorous cancers occur in the vagina and the breast, and I suggest two measures for the relief of the odor. I have found it satisfactory to excise the sloughing breast with an actual cautery and, after burning the base, either do a sliding skin graft, or allow it to granulate. If the breast is not cauterized, I have used potassium permanganate 1 to 400 compresses changed twice daily, or, what I think is more effective, ordinary granulated sugar, enough to fill the cancer area, changed twice daily.

The cautery is useful in cervical cancer followed by tampons of a syrup made by heating sugar and water changed twice daily. It is surprising how this treatment reduces the odor. And it is remarkable how the reduction of the odor restores the self-respect and good spirits of the patient. We tried most of the analgesic preparations and found Schlesinger's solution to be by far the best. Schlesinger's solution is composed of—

Morphine Hydrochloride	grs. x
Dionin	grs. xx
Hyoscine Hydrobrom.	gr. ⅛
Distill Water qs ad	m. 500

The dose is four minims by hypodermic, slowly increased to twenty minims. We found that the dose could be increased very slowly and that the reaction of the patients was better on this preparation.

Also hypodermic tablets—

Morphine Hydrochloride	gr. 1/10
Dionin	gr. 1/5
Hyoscine Hydrobrom.	gr. 1/800

Each tablet is the equivalent of five minims Schlesinger's solution.

One word is required about the administration of barbital preparations—"Don't." After a few doses the mind is disturbed and illusions and hallucinations make patients difficult to control.

Much can be done to increase the comfort and prolong the life of persons with inoperable carcinoma, and it is our duty as physicians to employ all possible measures to relieve their mental and physical distress.

Case 1.—Mrs. M. L. consulted me on December 25, 1936, at her home for a pain which involved the crest of the right ilium, the right lumbar muscles and the epigastrium. The pain had been present for thirty-six hours and was becoming more intense. She was groaning and turning from side to side trying to relieve herself. A heating pad which was effective at first was not effective at this time. She was eighty-three years of age, small of frame and quite emaciated. There was no distention of the abdomen. She had not vomited, there were no masses nor enlarged glands which could be felt. The case appeared to me one of ureteral obstruction.

She told me that she had had similar attacks at intervals of three or four weeks for one year. She was relieved by ¼ gr. morphine, and a urinalysis was made the following morning. This was negative for blood and for other gross pathology. She refused to go to a hospital for investigation, and, after a day or so, left her bed and resumed her household duties which included going to market. About ten days later I was called and found her symptoms to be the same as on my first visit. The symptoms disappeared after twenty-four hours.

On January 24, 1937, I persuaded her to go to the hospital for X-ray study. A carcinoma involving the pylorus was discovered. She returned to her home and the attacks of pain became more frequent, but now involved only the epigastrium. Vomiting began and continued almost daily. I proposed to do a gastro-enterostomy to give her more comfort, but she refused this until May 8, 1937. At this

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time her weight was seventy-two, which was ten pounds lighter than she was in January. Avertin anesthesia with ethylene was very satisfactory as anesthetic and the stomach was explored and the X-ray findings were proven. The cancer involved the lower one-third of the stomach. A posterior gastro-jejunostomy was performed and the patient returned to bed.

Since the operation the patient has had no pain and no vomiting. For a few days there was some gastric distention which was relieved by the Fowler position. At this time she is eating her food and enjoying it. She is without discomfort and I look for her to gain weight, and last months longer than was otherwise possible.

Case 2.—Miss M. S. consulted me on April 20, 1937, for abdominal pain, vomiting, and abdominal distention. She was seventy-two years old, and told me that she had been operated upon in Pennsylvania in September for a bleeding "fibroid" uterus and that a hysterectomy had been done. She was in good health after her convalescence until four weeks before I saw her. During the past four weeks she has been extremely constipated, has had much gas and later has vomited once a day. She has been passing blood per rectum for four weeks.

Miss S. was a small thin, but not emaciated woman whose abdomen was moderately and generally distended. She has lost twenty pounds in the last month. Pain was present on deep palpation over the sigmoid and more deep resistance was felt there then in other parts of the abdomen. Her recent median scar was present.

This case was either a cancer or an obstructing adhesion. A portable X-ray was taken on the following day and a large cancer of the sigmoid was found. I telephoned the Pennsylvania surgeon who told me that he removed a carcinomatous uterus in September and that the left tube was adherent to the sigmoid and that the pathologist found the tube to be cancerous also.

On May 4, 1937, I made a left para-rectus incision and explored the abdomen. The left side was the site of an adherent mass involving the descending colon and sigmoid about the size of a small grapefruit. Obstruction was not complete, and a loop of colon was delivered and sutured to the peritoneum and skin preliminary to a colostomy. Three days later a colostomy was performed in bed without anesthesia and with a cautery. Great relief was experienced after this procedure and the patient is now being X-rayed in an attempt to lessen the size of the tumor with the idea of attempting its removal in two or three months. This patient is without distress and is happier than she has been since her trouble manifested itself in March of this year.

1915 Biltmore Street, N. W.

EARLY ADVENTURES IN PUBLIC HEALTH IN VIRGINIA.*

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FOREWORD: The following paper is an expansion of certain short radio talks recently made over WRVA, Richmond, Virginia, in the period "On the Air" donated by that station to the Departments of Public Health and Welfare at the noon hour on the second and fourth Mondays. The subject matter is or should be of special interest to Virginia physicians.

EXHIBIT OF MEDICAL PROGRESS: Citizens of Virginia, especially her physicians, who do not visit the exhibit of Medical Progress prepared for the Richmond Bicentennial and now† on display at the beautiful home of the Richmond Academy of Medicine, will miss seeing a wonderfully interesting, informative and colorful panorama of the history of Virginia medicine. A look at the Medical College of Virginia's part in that exhibit, will alone repay any one's time and will certainly stir in the breasts of old Richmonders a deep pride in the extraordinary development of a College long devoted to scientific instruction in the Medical Arts, which now has emerged into the full light of its long deserved place in the sun.

*Read at meeting of the Southside Virginia Medical Association in Petersburg, June 15, 1937.
†Exhibit closed September 30, 1937.

While the exhibit in all of its parts shows graphically, as it is supposed to do, the steps in Richmond's advance in Scientific Medicine, Curative and Preventive, to those who have kept in touch with state medical matters through the years, it clearly shows the commanding place the capital of the state has occupied in the evolution of medicine from the "Noble Art" as Hippocrates called it, to the "Nobler Science" of increasing exactness and life-saving possibilities.

Among the exhibits that challenge attention and to which I especially wish to direct attention is the portrait gallery of Richmond physicians, and not only to the well-painted portraits of distinguished medical men living and dead but the photographic display of very many of them, loved of old and long gone to their shining reward, and the surprisingly complete exhibit of photographs of living Richmond practitioners.

The portraits of those who have served and are serving the Medical College of Virginia as teachers of medicine are appropriately placed in sequence in the booths devoted to the subjects taught by them. In this array are found distinguished Richmond men who have served the State upon its successive Boards of Health and upon whose devoted unpaid service in the cause of preventive medicine, Virginia's superior health situation among the states is primarily due. Perhaps the most significant "Adventure in Prevention" was the creation of the first State Board of Health of Virginia.

FIRST BOARD OF HEALTH: On the initiative of Dr. James L. Cabell of the Medical Faculty of the University of Virginia, the Medical Society of Virginia in the fall of 1871 sponsored a bill to establish a "State Board of Health and Statistics" to endeavor to control the spread of contagious disease so prevalent in the Commonwealth, and by hard work secured its passage, the bill being signed by the Governor, Gilbert C. Walker, February 13, 1872. The Board consisted of seven physicians and was the third State Board of Health to be formed in the United States—California and Massachusetts being only a year or two ahead of Virginia.

Four well-known Richmond physicians were placed upon the Board, Dr. J. Grattan Cabell, Dr. L. S. Joynes, Dr. George Ross and Dr. Landon B. Edwards. The other members were Dr. J. W. Lawson of Isle of Wight, Dr. A. M. Fauntleroy of Staunton and Dr. James L. Cabell of the University of Virginia, the last named being president.

Dr. Landon Edwards was appointed from Lynchburg, but shortly thereafter moved to Richmond. He was perhaps the best known physician in Virginia for a third of a century and by reason of his charming personality, his ability as a physician, as a medical editor, and as a secretary of the Medical Society of Virginia for many years endeared himself to all and won the abiding respect of the medical profession and all others with whom he came into contact. He was a member (the only one) who served on Virginia's first two Boards of Health. Dr. James L. Cabell, the moving *spirit* of this Virginia's first adventure in health, had the distinction also, among many others of his long and fruitful life, of being appointed president of the first national Board of Health ever organized. However, it is not my purpose at this time to indulge in eulogy of those who in early years pioneered in the public health field in Virginia and laid the foundation upon which others have built so splendidly. It would hardly be possible to name them all, much less do justice to them.

LEADERSHIP: The leadership in Public Health which Richmond furnished at this period and in subsequent years was pronounced and today still is dominant. It should be remembered that at the time this Board was formed over sixty-four years ago, Louis Pasteur of France and the world had not made his discovery of the relation of germ life to disease. The results of observation, experience and the application of rule-of-thumb methods were the main reliance of the doctors in cure, and in prevention of contagious sickness. Except for vaccination against smallpox during a scare, quarantining the patient and moving people away from the vicinity, nothing was done to control disease, and these recourses were not always easily available. Moreover, rarely were they ever applied until a disease became epidemic and the citizens became alarmed and demanded action. Smallpox, typhoid fever, dysentery and summer complaint, malaria, frequently of malignant type, diphtheria, scarlet fever, meningitis and rampant tuberculosis, along with our present plagues of influenza, measles, infantile paralysis, and venereal disease, in season and out, remained unchecked amid a population more or less resigned to endemic infectious disease as to the inevitable will of God.

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In the light of the virtual eradication of some of the diseases named and the control of most of the others, it is hard for this generation to appreciate the matter-of-course way the public accepted the disease situation of that time. The realistic doctors, however, would not accept it and did not rest until the State at least made a motion toward doing something about it.

A LEGISLATIVE "JOKER": When the Board of Health bill, however, was up for passage, some legislative jokester or pinch-penny ignoramus—there was an overplus of that type in the 1872 legislature—secured an amendment to it, removing the small appropriation from the act in the following words, "The State Board of Health (thus created) shall in no way be a charge upon the State."

The bill was looked upon by the citizens generally and politicians particularly as a fad of college professors and theorists and not in the domain of practical politics, but to humor an influential group of well-meaning visionaries as they thought, the bill was passed, but in such shape, that if the Board attempted to do anything affective to change the existing disease situation, it must pay its own expenses. It was beyond the belief of the legislators of that day, that any group of citizens would seriously undertake to develop an effective organization to destroy by wholesale the sources of their own income. The carpetbagger and the scalawag were in the saddle at that time it must be remembered. Their idea apparently was, that though they could not see him there must be a "nigger in the woodpile" somewhere.

The Board elected a Richmond physician Dr. L. S. Joynes as Secretary and struggled along for six or eight years with a skeleton organization only, meeting annually with the Medical Society of Virginia. It appealed, with the support of the organized medical profession, to legislature after legislature for funds to enable it to do its job, but without avail, so the Board at length resigned in a body. This closed the first noble adventure of Virginia doctors in state-wide disease prevention.

"BUSINESS" TO THE RESCUE: More than twenty years later in the spring of 1893, when Asiatic cholera was raging in Europe and threatened to spread to the United States and to Virginia which was utterly unprepared to combat it, the Richmond Chamber of Commerce, an organization of keen business men, then as now, and a group to whom Governors always listen with respect, realized how disastrous to the commercial interests of the State would be a plague of cholera, and formed a committee to wait upon the Governor and ask him to revive the State Board of Health under the existing law and furnish some money to take such steps as might be necessary in the emergency.

Governor Philip W McKinney acted promptly and appointed a State Board and from the State Contingent Fund provided a modest amount for expenses, and the Richmond Chamber supplemented it with more. The Board of Health consisted of Dr. Rawley W. Martin of Lynchburg, Dr. Robert J. Preston of Marion, Dr. Paul B. Barringer, University of Virginia, Dr. James Parrish of Portsmouth, Drs. Landon B. Edwards, Hugh M. Taylor, and Paulus A. Irving all of Richmond. Dr. Irving was secretary and operated under the old inadequate 1872 law.

Thus began the second great adventure in Public Health in Virginia, an adventure which proved not only of immense importance in itself, but sowed the seed of fruitful health education, from which in time grew the present State Health Department, the harvest of health of which Virginians have long been the beneficiaries.

A ROCKY ROAD: I wish I could say that from this point onward the cause of public health found plain sailing. This unfortunately was not the case. The cholera situation in Europe abated and the alarm in this country, which stirred the Governor of Virginia to action, subsided. By dint of careful inspection and quarantine at all sea-ports, and by the dissemination of information as to the known methods of spread of cholera, the United States escaped the scourge. The new Board of Health, the second in Virginia history, operating under the old law with its limited powers and most meagre, temporary resources, did its part. Dr. Paul B. Barringer of the University of Virginia, the only survivor today of that distinguished group of physicians appointed by Governor McKinney to the Board, was deputized to prepare a pamphlet on cholera for general distribution which amply covered what was then known about this death-dealing pestilence. This pamphlet was widely circulated, and for a time every community was on the alert, but like the cry of wolf in the old story, when there

was no wolf, the public lost interest since the cholera wolf did not appear. They failed to appreciate the always present and familiar danger from typhoid fever wolves and the dysentery and malaria wild beasts that were already tearing away at the health and lives of every community in the State and crippling and slaying Virginians by thousands every year. The Board of Health, a highly competent group of skilled scientists, were ready to hunt down these deadly dangers, but had no appropriation for carrying on. The resources of the Board of Health consisted mainly of a deep concern for the serious plight of the public in regard to diseases, particularly those of the summer-time. They possessed knowledge in regard to the best way known to prevent and control the worst of them, and had a complete willingness to work for nothing in directing the control work. They, however, only modestly asked that they be provided with one salary for a competent secretary and necessary expenses to enable them to gather the facts about prevalent diseases early enough to be of help in preventing their spread.

BRICKS WITHOUT STRAW: Several years passed and two more legislatures came into power (1896) before even a meagre appropriation of $2,000 per year was available to assist in carrying out the Board's purposes. This amount was too little to insure the employment of a competent whole time clerk, much less collect the information desired, print and distribute preventive information to the doctors and to the public. The Board of Health, however, under the presidency of Dr. Rawley W. Martin of Lynchburg with Dr. Paulus A. Irving of Richmond (and Farmville) as administrator, undertook to try their best "to make bricks without straw" (not always an impossible task). A statewide system of local volunteer physician Boards of Health was set up, and in a few years by persistence in appeal, aided by timely cases of suspected yellow fever at Hampton, and an increase of smallpox in the State secured a better health law (1900) and an appropriation of $5,000 per year.

Great credit for this result is due Dr. Charles R. Grandy of Norfolk who framed the bill and indefatigably worked for it, and to Drs. A. S. Priddy, of Charlotte and George W. Le Cato of Accomac, members respectively of the House and Senate who introduced it, and secured its passage. Dr. Rawley W. Martin had the distinction of being not only a physician of exceptional ability and note, but a great citizen and an intrepid soldier. As Lieutenant-Colonel of the 53rd Virginia Regiment, at the head of his troops, he took part in the gallant charge of Pickett's Division that immortalized itself at Gettysburg, he being the first one to scale the stone wall on that fateful day, falling wounded, all but to death, within the ranks of the fortified enemy.* His interest and research in the whole broad field of medicine made him quick to see the importance of the preventive side of his profession and following Pasteur's discovery of the germ origin of contagious disease, he sought by every means in his power to secure the application of this life-saving knowledge to his disease burdened state.

The task needed a man of his heroic qualities of mind and heart for it demanded not only the pioneer spirit in unusual degree, but the courage, the fortitude and determination to persist under many discouragements, for many years. The revolutionary ideas involved in the theory of the germ origin of disease were known generally only to medical men, and were not accepted by large numbers of them, almost all of whom were taught differently at medical college. A campaign of education had to be instituted among physicians first, since without them real progress in disease prevention was impossible, then as now. The Board had no power to enforce its views under the existing law. It must secure cooperation and proper cooperation is impossible except from informed and convinced people. As is the way with all revolutionary movements many people in high as well as low station had to die before the public was ready to accept as truth the doctrine that hitherto unknown pathogenic germs were the cause of infectious diseases.

Time, however, "Marches on." So year after year went by, with faithful Dr. Paulus A. Irving, Secretary, a devoted medical and public health educator at the helm conducting the Board's campaign.

FRUITFUL SEEDS OF SLOW GROWTH: No physician can read Dr. Irving's monthly bulletins from May 1896 to July 1908 without a feeling of great pride in the leadership of the Virginia medical profession then and through the years since, for it must be remembered that the law under which

*See *Virginia Medical Semi-Monthly*, October, 1902, Presidential address of R. S. Martin of Stuart.

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the Board operated was the creation of the Medical Society of Virginia, whose active and constructive support of health work has never failed. Virginia and the medical profession owe a great debt of honor and of gratitude to the Board of Health of those years and to Dr. Paulus A. Irving, its executive officer. Dr. Irving--that stalwart figure, who for fifteen years at little pay and with virtually no assistance except from his local volunteer boards of heal h, kept the torch of public health burning in every part of Virginia! It is to the records found in the old files of the bulletins sent out by him that I am indebted for many of the facts in this brief account of a truly heroic period in public health history. For fifteen years the educational campaign went on but owing to the lack of mandate in the law, and insufficient funds with which to fight disease adequately, even had there been legal warrant for it, no progress of any importance in disease reduction was discernible. Such figures as were available were wholly unreliable, owing to the failure of many boards to report regularly, and those that did reported usually in general terms. For instance, in June 1902, from the secretary of the excellent local Board of Health of a county not far from Richmond, the following report came—"2 cases whooping cough, 2 cases of hemorrhagic malaria fever, 4 cases of tuberculosis, 1 case of typhoid fever. Diarrhoea, dysentery, cholera infantum and cholera morbus prevailing." In the same month, a report from another county, including a large town, says "whooping cough prevalent, a few cases of measles, one membranous croup, several cases of tuberculosis, three cases of typhoid fever, seasonal diseases prevailing, sanitary condition only fair." From another—"One case of whooping cough, one case of tuberculosis, ten cases of smallpox, epidemic of dysentery, sanitation very bad." from a large number of county boards, the notation always was "no report."

A NEW DEAL: The reports from the counties reporting, the record shows, were becoming more and more informative and specific, but since nothing effective was ever done about the conditions reported, or indeed could be done under existing circumstances, certain progressive physicians of the State among them, Dr. Ennion G. Williams who as a member of the Richmond City Council had secured a Health Department for that city, felt that the time had come for expansion of the activities of the State Board of Health, securing, if possible, more power and money. An important item in the bill approved by the Board of Health and presented to the General Assembly of 1908 was a paragraph making the Medical Society of Virginia directly responsible for the conduct of health affairs in the State, much as in North Carolina and Alabama today. The bill created much interest and won many friends among the legislators but failed of passage. Unfortunately the bill to abolish the license tax on physicians was brought forward at the same time and suffered defeat. As soon as the vote was recorded against the bills as endorsed by the medical profession of the State, Captain W. W. Baker of Hallsboro, member of the House of Delegates from Chesterfield introduced a bill almost identical with the Board of Health bill just defeated but carrying double the appropriation asked for and providing for a State Board of Health with a Commissioner appointed by the Governor, and in addition establishing a State Sanatorium for the treatment of tuberculosis. This bill which was passed as an emergency measure in the closing hours of the session was signed by Governor Claude A. Swanson and became a law. Thus, though not exactly in the form desired, the State Board of Health's major objectives before the Assembly were achieved and so ended Virginia's second great adventure in disease prevention, ushering in the present era of disease control which after twenty-nine years of active service to the State, in successful attack upon the causes of infectious disease wherever found, yet holds in remarkable degree the confidence and support of the medical profession.

Good sportsmanship, good citizenship and self-abnegation on the part of the physicians could scarcely go further. The make-up of the new Board of Health and its activities to the present time is another and a longer story.

STAB WOUND OF THE HEART WITH CARDIAC TAMPONADE—REPORT OF A CASE.

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Traumatic wounds of the heart are not a rare happening, as they are of constant daily occurrence; however, operations on the heart following traumatic wounds are still of sufficient rarity to warrant this report.

Except in the extremely rare case, penetrating wounds of the heart have but one outcome, and that is death. However, in those cases in which a penetrating wound of the heart does occur in which the posterior wall of the pericardium is left intact, and the instrument inflicting the wound is not of sufficient size as to cause a gross opening in the chest wall, there is still a remote possibility of rendering aid, that is, providing too great an interval does not elapse following the injury, a fairly early diagnosis is made, and a surgeon is at hand who has the courage of his convictions and the willingness to operate at the expense of an increase in his surgical mortality rate.

Penetrating wounds of the heart are usually the result of violence, occurring in out of the way places, so that when the patient is seen by the physician, the individual is either just expiring or has expired shortly before the arrival of the physician or coroner. However, in those cases which are seen early enough, there is possibility of assistance.

Varying with the severity of the chest injury the subsequent cardiac damage depends on the point of impact. Various types and degrees of injury to the heart and associated structure may take place. When there is a rupture of the heart following trauma to the chest, there is a bursting of the heart due to the compression of the thorax. Bursting may also be caused by any force causing a sudden rise of intracardiac pressure. In cases of bursting of the heart or of contusion sufficient to cause rupture, death is immediate. Death due to rupture of the heart, presents characteristic shock, complete collapse, feeble or no pulse, falling arterial and venous pressure and the presence of free blood on tapping the pericardium. If the injury involves the aorta or large veins, death occurs from exsanguination, by hemorrhage both into the pericardium and spilling into the thoracic cavity. In the penetrating wounds of the heart in which the anterior pericardium only is involved, leaving the posterior pericardium intact, death may be immediate or within a few minutes to an hour or more, depending on the severity of cardiac damage. Death does not occur from hemorrhage but from cardiac tamponade, due to the rapid accumulation of blood in the pericardial sac. As a result of the blood accumulation, a point is finally reached at which the intrapericardial pressure will close the anterior pericardial opening by pressure against the thoracic wall. The pressure within the pericardium will continue to increase until it equals the pressure in the auricles and they cease to function, circulation stops, and life cannot be maintained. Clinical findings are increased cardiac dullness, diminution in arterial pressure, rise in venous pressure until arterial and venous pressure are equal, bloody fluid on paracentesis of pericardial sac, extreme shock, no pulse and finding of external evidence of trauma. Doubtless an X-ray would reveal the characteristic findings of a pericardial effusion or exudate.

REPORT OF CASE

Colored male, aged 20 years, admitted February 20, 1937. At approximately 10:35 P. M., February 20, 1937, an emergency call came to the hospital relative to "man hurt" on the street. The ambulance responded and the patient was found lying on the sidewalk unconscious. Information rendered at the scene was to the effect that the patient had been "stabbed several minutes ago." The patient at this time was in a dyspneic state and having considerable shock. Superficial examination revealed a large splotch of blood on the clothes in the region of the left chest. The patient was placed in the ambulance and brought to the hospital at approximately 10:50 P. M. A more thorough examination at this time revealed a 20-year old colored male, well-developed and well-nourished, unconscious and in extreme shock. Examination of the

body revealed two stab wounds of about the same size, one-half inch in length, one on the antero-lateral surface of the left deltoid region and the other on the left chest wall at the fifth intercostal space and about one inch within the nipple line. No pulse could be obtained at the radials and no heart sounds detected. The blood pressure could not be obtained, it being in the zero range. The respiration, while of a dyspneic quality, was not rapid but was of moderate depth. There was no bleeding from either stab wound.

A diagnosis was made of stab wound of the heart with cardiac tamponade. The patient was given fifteen grains of caffeine-sodio benzoate and taken to the operating room immediately, where an intraveneous injection of 1,000 cc. normal saline was started, and a fourth-grain morphine given, together with a fiftieth of strychnine.

Operation was started at 11:20 P. M. without anesthetic—local or general—and an incision was made at the left costo-sternal border, running perpendicularly across the fourth, fifth and sixth ribs and parallel along the under margin of the sixth rib. Approximately two inches of the exposed ribs were reflected outward, exposing the pericardial sac which was opened, revealing the pericardial cavity filled with fresh blood. This was immediately evacuated and the heart grasped. The exposed heart at this stage had an extremely rapid rate. Blood continued to fill the pericardial sac, but, because of the rapidity of flow, it could not be discerned from whence it came until the heart was brought into better view. A laceration was made visible at the apex, which extended completely through the left ventricle, from the anterior through the posterior surfaces. Using No. 1 chromic catgut the lacerations were sutured, after which the pericardial sac was closed. Considerable blood escaped into the left thoracic cavity which had been inadvertently opened, causing a complete hemo-pneumothorax. As much blood as possible was aspirated through the thoracic opening and then the opening was closed by suturing the reflected ribs into place by means of No. 1 chromic catgut sutures through the periosteum and intercostal muscles. The skin was closed by silkworm interrupted sutures. One soft rubber penrose drain was left in the pericardial sac. The operation was over at 11:40 P. M.

Patient was taken to the ward. The pulse was of good volume, irregular and having a rate of 100. Respiration was 36, and temperature 94. An intravenous injection of 1,000 cc. normal saline was started, and gr. 7½ caffeine sodio-benzoate given, this latter being repeated every three hours. Morphine sulphate gr. 1/6 was ordered every 3-4 hours to maintain respiration around 18-20 per minute and for pain. At 3:00 A. M. patient began to regain consciousness and became rational and complained of thirst. Sips of tap water were given. At 7:45 A. M. patient vomited bloody-colored fluid and again at 9:30 A. M., there being an emesis of considerable bloody-colored fluid, after which he did not vomit again. From the first post-operative day on to the time of death on the fourth post-operative night, the patient was conscious and had a pulse which varied between 100 and 144, respiration between 30 and 48, while the temperature, which was 94 immediately after operation, varied between 99 and 101.5 at time of death. The patient complained at intervals of considerable pericardial pain which radiated down into the epigastrium, the pain being controlled by frequent doses of morphine. Death occurred at 4:10 A. M., February 25, 1937, four days after admission.

An autopsy was obtained and the following findings were reported by the hospital pathologist:

AUTOPSY REPORT

General Description: The body is that of a negro man about 20 years of age, about 5 feet 10 inches tall, and weighing approximately 150 pounds. Just to the left of the mid line and overlying the second, third and fourth ribs left is a recent incision with sutures in place. On pressure sero-purulent fluid exudes through the lower end of the incision. Rigor mortis has already set in.

Abdomen: On opening the abdomen the peritoneum is moist. No free fluid is present in the abdominal cavity. The intestines lie free. There is no obstruction; no evidence of inflammatory reaction demonstrated. The caecum, ascending and transverse colons are normal.

Stomach: The stomach is dilated and distended and on section contains a small amount of fluid and a large amount of gas.

Liver: The liver is normal in size, color and consistency. On section normal markings are demonstrated.

Spleen: The spleen shows no evidence of pathology other than an old healed infarct on the anterior surface.

Pancreas: The pancreas shows no changes.

Kidneys: The kidneys are normal in size. The capsule strips normally. On section the cortex and medulla markings are plainly seen. There is no congestion, no pus, no cysts, no stones.

Thorax: Lungs: On opening the thorax the left lung is completely collapsed and the viscereal pleura contains a large amount of recent fibrinous exudate. The left pleural cavity contains approximately 4,000 c. c. of turbid bloody fluid. The right lung is well aërcated. There is no consolidation and other than some slight congestion of the base shows no changes.

Heart: The pericardium has been recently sutured and is tightly adherent over the anterior surface of the left ventricle. The pericardial sac contains no fluid, no blood, and upon separating the pericardium leaves a roughened surface to both visceral and parietal pericardium. Just above the apex of the heart and in the left ventricle several sutures are in place on both the anterior and posterior aspects of the heart. The suture lines are healed; no leak has taken place. The coronary artery shows no evidence of sclerosis. All valves are apparently competent.

ANATOMICAL DIAGNOSIS

1. Hemo-pneumo-pyo-thorax, left
2. Pericarditis
3. Stab wound left ventricle
4. Gastric dilatation.

CONCLUSION

The foregoing case was operated upon approximately one hour after injury was received. One case, of course, is no criteria of elapsing time that may pass before operation should be done, but it does show that relatively considerable time may elapse before death does occur from cardiac tamponade.

RHEUMATIC HEART DISEASE.*

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A disease which has an unknown etiology, with such diversified manifestations and resulting in a fair percentage of fatalities, necessarily excites widespread interest and the production of a voluminous literature. In this paper I shall try to bring up to date our present knowledge of heart disease of rheumatic origin and give some indication of its frequency in our own community.

Historically the correlation between inflammatory rheumatism and heart disease was first made by Jean Baptiste Bouillard in 1836, and as early as 1850 Botrel believed that all chorea was of rheumatic origin. Hillier in 1868 described the rheumatic nodule, and in 1888 Cheadle recognized the systemic nature of the disease, describing many of its widespread manifestations. In 1904 Aschoff made his classical description of the Aschoff nodule or body, placing the disease on a specific basis pathologically. A vast number of reports have been made as to the discovery of an etiological agent. In 1914, however, Rosenow of the Mayo Clinic isolated a diplostreptococcus from the blood, tonsils and joints of rheumatic patients and believed this to be the cause of the disease. He reproduced arthritis, pericarditis and myocarditis in rabbits with the cultures. His work has never been accurately reproduced but nevertheless it must be seriously considered in the light of the undisputed fact that the disease is associated with streptococcus infections and certainly manifests in many ways the characteristics of a streptococcus invasion.

The incidence of rheumatic heart disease varies with the locality, being more frequent in the North Eastern States and less frequent in the South. It is almost non-existant in the tropics. It is less virulent in the warmer climates, has a milder course, with a more advanced age being reached by those with heart lesions, and fewer fatalities in the acute stage. The statistics then vary with the locality.

In New York City, in a survey[1] of over 160,000 children, 0.9 per cent were found to have organic heart disease and 43 per cent of these were of rheumatic origin. In New England[2] it was found to be present to the extent of 40 per cent of all heart disease and 93 per cent in all under 20 years of age.

*Read before the Norfolk County Medical Society, May 17, 1937.

To gain some idea of the incidence of the disease in Norfolk, Virginia, I have found that 40 cases of rheumatic heart disease were admitted to the Norfolk General Hospital in the three years 1934-35-36. Five, or 8 per cent of these were negroes. This was .25 per cent of all cases admitted and approximately 12 per cent of the total number of heart cases admitted. Twenty-five, or 62 per cent, were admitted because of cardiac failure and only six, or 15 per cent, were admitted with acute disease. Twenty-five, or 62 per cent, gave a history of tonsillitis, rheumatism or chorea. No history of any of these was obtained in the remaining 15 cases. The average age of these patients was 39 years. There were 7 deaths, 4 due to bacterial endocarditis and 3 to failure. Eighty per cent were born in Virginia or neighboring States. It has not been possible to find out if these patients contracted their rheumatic fever elsewhere than in Virginia but the incidence of those born in this general locality seems to indicate that most at least are Southerners and have lived in a climate similar to that of Virginia. These figures seem to indicate that the acute disease is relatively rare but I believe that that is somewhat misleading since most cases in a community such as ours would be mild and treated in the home by a private physician. The older age incidence in this series indicated the mildness of the disease and its more slowly progressive nature in a community where the so-called malignant rheumatic fever is rarely seen.

The etiology already briefly spoken of has recently been concisely but completely discussed by Drs. H. Sprague and Paul D. White in the *Journal A. M. A.*, November 2, 1935. In this they present its geographical locality, its common occurence in the lower middle class, increased activity in winter and spring, familial tendency, optimal age, period of initial onset, and the reactivity of the disease by non-specific agents as making up the chief etiological leads of the disease. The disease may also occur in epidemic form, as during the war. No race seems to be exempt if they happen to live in a locality where the disease is common. The optimal age of onset is 5 to 20 years of age. But onset in persons of 40 to 50 years is not uncommon.

Chorea has for many years been considered a pre cursor of rheumatic heart disease. Its importance has recently been clarified by Drs. T. D. Jones and E. F. Bland, *Journal A. M. A.*, August 24, 1935. In this they found that in those patients with chorea alone the heart was involved in only 3 per cent, while in those with combined joint manifestations and chorea it was involved in 73 per cent. They concluded that chorea was a mild manifestation of rheumatic fever and not especially conducive to the development of heart disease.

The role played by scarlet fever in the cause of mitral disease is apparently unimportant. When it does occur it is usually associated with joint involvement. E. H. Place, in his article, Heart in Diphtheria and Scarlet Fever, *New England Journal of Medicine*, 1932, reaches the conclusion that benign endocarditis is the characteristic lesion and that myocarditis alone is rare, no well marked case being observed in several thousand listed.

The finding clinically and at autopsy of hearts presenting the characteristic lesions of rheumatic heart disease, where careful questioning has been unable to disclose any history of rheumatic fever, tonsillitis, sore throats, chorea, scarlet fever, or any vague growing pains or aches is another of the many stumbling blocks in arriving at an etiology. It has led to the classification of the so-called rheumatic type of heart disease and is just another of the many remarkable findings in an extraordinary disease.

In summation, it may be said that the disease is generally thought to be of non-hemolytic streptococcus origin. Whether the lesions in the heart are allergic manifestations of foci elsewhere in the body or are caused by the direct invasion of the organism is open to question. It occurs chiefly in persons of poor circumstances where there is more opportunity for infection and in localities where pulmonary and upper respiratory infections and tonsillitis are frequent diseases and especially where diseases of a streptococcus nature abound. The portal of entry is unknown but is usually considered to be the tonsils and nasopharynx.

The pathology of rheumatic heart disease is characterized by the specific Aschoff body, a periarterial inflammatory reaction of small round cells with a smaller collection of large giant cells. They may be scattered few or in large numbers. They go, leaving no evidence of their presence unless the illness is prolonged and scarring takes place. In the heart the mitral valves and myocardium are chiefly affected, with the aortic, tricuspid, and pulmonary

valves less frequently involved in the order named. Paul White gives the frequency as 62 per cent mitral involvement alone, 5 per cent aortic alone, and 33 per cent combined mitral and aortic. The tricuspid valve is very rarely involved, only once in his series of 933 cases. The pulmonary valve was not involved in any case in the same series.

The characteristic valvular lesion is the so-called verrucous vegetation along the valve margins composed of a thrombus made up chiefly of fibrin. The valves become thickened and adhere at their margins, resulting in a narrowing of the valvular opening. A shortening due to scarring of the chordae tendineae results in an imperfect closure of the valves so that an insufficiency also develops. The result is a stenosis and insufficiency which is almost always coexistent. The early myocarditis with dilatation of the heart usually results in a regurgitation, followed later by the stenosis and the characteristic diastolic murmur. The lesion of the aortic valves is almost identical. Here, too, the regurgitation usually precedes the stenosis. The lesion of one valve may be more predominate than the other and over-shadow it clinically. The combined aortic and mitral disease results in a picture which is a combination of the two, with the predominance of one resulting in a picture chiefly characteristic of the predominant lesion. The valvular damage results in tremendous cardiac enlargement and hypertrophy. In mitral disease the right ventricle and left auricle are chiefly enlarged with also some enlargement of the left ventricle. The characteristic result of the aortic lesion is immense enlargement of the left ventricle downward and to the left. Stenosis of the aortic valve results in less enlargement. The largest hearts known are usually due to aortic regurgitation. It is in aortic lesions that coronary disease is most apt to occur in conjunction with rheumatic hearts. Narrowing of their orifices combined with low diastolic pressure leads to anginal attacks and even sudden exodus due to occlusion of the mouths of the coronaries. The pericardium is frequently attacked, resulting in effusions and adhesions. The adhesions, while not frequent, are nevertheless important in causing constrictions or attachments that may result in failure later in life.

It should be said here that the heart disease is only one of the many manifestations of rheumatic fever which is actually a systemic disease involving the pleurae, peritoneum, lungs, tendons, synovial membranes, kidneys, brain and skin, as well as the great vessels and smaller arteries in all parts of the body. The various manifestations of rheumatic fever will not be gone into, but suffice it to say that the characteristic lesion, the Aschoff body, is usually found in these other regions affected, indicating them to be of rheumatic origin.

The symptoms will be briefly reviewed. These may be those of simple heart failure and decompensation or of the acute disease presenting the picture of an overwhelming infection and rapidly failing heart.

In children the symptoms may simply be those of ill health and lack of energy with occasional fever at 99 or 100 with few or no joint manifestations. The heart in these cases is often seriously damaged without the child ever presenting the picture of rheumatism. The severe migratory joint symptoms are usually more manifest in older children and adults, and frequently in these cases the heart is less affected than in the child presenting a subacute or recurring acute heart infection. Symptoms may be absent entirely, or there may be anginal pain and vague discomfort in the region of the heart. There will be some easy fatigue and dyspnea depending on the extent of the activity of the heart disease. Orthopnea may be present. Palpitation may be a symptom in rhythm disturbances such as fibrillation tachycardia or extra systoles. Hemoptysis is not infrequent and may introduce congestion and failure due to stenosis. The symptoms of a failing heart may be brought on by the over taxation of the heart due to the valve deformities, pericardial adhesions or effusion. Frequently failure is precipitated by a recurring acute attack. Almost any type of acute infection or even pregnancy adding an additional load to the already overtaxed heart may be the inciter of failure. Fibrillation or other change in rhythm may usher in the decompensation.

The characteristic murmur of mitral regurgitation is the harsh or blowing systolic murmur heard best over the apex and transmitted to the axilla. The murmur of stenosis is the low pitched mid or late diastolic rumble extending sometimes up to and replacing the first sound. In a mitral stenosis regurgitation is almost always present as is also the reverse whether the pathognomonic murmur be audible or not. The murmur of aortic regurgitation

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is a high pitched sound early in diastole, heard best over the base, and the diagnosis is made by correlating this finding with that of Corrigan pulse, wide pulse pressure and left ventricular hypertrophy. The murmur of stenosis of the aortic valve is a harsh systolic sound heard best over the base and usually transmitted upward to the neck. The pulse pressure is usually small in mitral stenosis and aortic stenosis.

The wider the insufficiency of the mitral valve the quieter the murmur becomes until in a valve that is completely incompetent there may be no murmur at all. It gives rise to the greatest amount of heart damage and the patients generally succumb early. The reverse is true in stenosis with regard to the murmur. Palpable thrills are often felt. Their presence depends upon the murmur. They have as a rule the same significance, usually being present when the murmurs are loudest. Mitral disease is of rheumatic origin in a great majority of cases, while in aortic disease it must share the honors with lues.

The signs of pericarditis with or without effusion may be the presenting picture. In the active illness fever may or may not be present. In the severer cases subcutaneous nodules are present and indicate activity. Erythema marginatum is also an indication of activity and purpura rheumatica, while an infrequent manifestation, is sometimes seen in the more malignant cases.

In the laboratory leukocytosis is a common finding, the count usually varying between 9,000 and 20,000. It is seldom higher than 20,000 unless complications are present. A moderate anemia of the secondary type is usually present in the active disease. The sedimentation rate is practically always increased and is used as an indication of activity. The blood culture is nearly always negative. The findings of a positive skin reaction to the intradermal injection of the toxic filtrate of the streptococcus has been reported but this needs further confirmation and study.

Urine is not as a rule unusual. Albuminuria is frequent in the presence of cardiac failure. The common picture in acute rheumatic fever is a trace of albumin, hyaline casts and occasional red cells. The fulminating cases occasionally present the picture of severe hemorrhagic nephritis.

The electrocardiogram demonstrates a certain amount of partial heart block with a P R interval of .20 seconds or greater during the acute stage or it may show nothing. Recent reports by Robert L. Levy and H. G. Bruenn in New York indicate that the acute cases, even in the absence of a prolonged P R interval, may demonstrate in the chest lead an upright T wave. The T wave in the chest lead is normally inverted. They also considered a negative T deeper than 9 min. to be abnormal. The findings of a notched or monophasic Q R S, an elevated S T or a depressed S T of greater than 2 min. below the isoelectric line, are also abnormal but are not specific for rheumatic fever. In a recent number of the *Heart Journal,* Bruenn has reported on the causes of heart block in rheumatic hearts and concluded it to be of vagal origin in the acute cases. Various arrhythmias, if present, will also be demonstrated.

The X-ray picture is of little help in the early stages of the disease, but as enlargement takes place due to valvular lesions or pericarditis, changes may be demonstrated that are almost specific. The picture, of course, depends on the pathology. In mitral stenosis the characteristic picture is that of an enlarged and dilated left auricle and pulmonary conus with enlargement and hypertrophy of both the left and right ventricular shadows, especially the right. The aortic valve disease gives predominately a picture of left ventricular enlargement.

The course of rheumatic fever is usually chronic and recurrent. The earlier in life the illness develops the more severe is the heart damage. The greater the number of attacks the more marked is the pathology in the heart. In the young adult the onset of subacute bacterial endocarditis, congestive failure or fibrillation resulting in failure are the dangers. The first failure is usually the forerunner of another and limits the patient considerably in his activity. The average age given by White reached by the various lesions is 30 years for the mitral alone, 43 for aortic and 32 for combined aortic and mitral. The slight impairment derived from one or perhaps two attacks of mild rheumatic fever may give no handicaps at all to certain individuals.

The chief specific complications of the disease are auricular fibrillation, congestive failure, and subacute bacterial endocarditis. Embolism to the brain, hemoptysis and hoarseness are complications that are the result of thrombi in the left auricle, pulmonary congestion and recurrent laryngeal nerve

pressure. Any superimposed infection may complicate the illness. Pulmonary tuberculosis has been pointed out as an infrequent complication due, it is thought, to the pulmonary congestion resulting from mitral stenosis.

Treatment of rheumatic heart disease varies with the stage of the illness. There are no new methods of treatment that are satisfactory. The policy to follow must be determined by the activity of the disease. The active case must be kept in bed. Salicylates should be given regardless of the presence of joints because there are indications that the progress of the heart lesions are somewhat inhibited by the drug. Tolysin or neocinchophen has been used but is less effective. Serum treatment is still in the experimental stage. Vaccines have been administered but these too are of doubtful value. The patient should be placed on a nourishing diet as soon as possible. It should be high in vitamines, especially A and C. Reports[3] recently indicate that vitamine C is important in the treatment of the disease and some[4] more enthusiastic have ascribed its deficiency as the cause of the disease. This certainly needs further study and confirmation. In chorea bed rest is the most satisfactory therapy. Drugs are not indicated except sedatives when necessary to control the convulsive movements.

The care of the convalescent resolves itself into the management of a cardiac case and the prevention of recurrences. Foci of infection should be removed. Tonsillectomy is indicated when the acute condition has subsided. Removal to the tropics or subtropics, as practiced by T. D. Jones and his associates has met with remarkable success in arresting the subacute cases and inhibiting the progress of the disease. There is no rule to follow for exercise in those with cardiac damage; each is a law unto itself, but a case with active rheumatic fever should be kept in bed until all evidences of activity have disappeared.

In the realm of surgery the release of adhesions is indicated in the adhesive pericarditis. Paracentesis may be necessary in the advent of an effusion. Some of the patients with repeated failures have had complete ablations of the thyroid to reduce their metabolism. Drs. Blumgart and Levine of Boston have reported on their work in this respect. The two cases that I have seen I cannot report on finally. One was done for repeated failure and this patient developed myxedema of a severe grade and had to be given thyroid. The other was operated upon for status anginosis. The angina was dramatically relieved for a while, but after some months returned.

In answer to the question, does the damaged heart get well, I refer you to an article by T. D. Jones and P. D. White[5] in which they studied a thousand cases. In this review they found that the signs do regress and disappear in 8.3 per cent of cases, but concluded that the absence of murmurs did not necessarily preclude the presence of some small amount of disease of the valve orifices.

In conclusion, the survey of three years' admissions to the Norfolk General Hospital, although a small series, gives a percentage of rheumatic fever and rheumatic heart disease that is to be expected for this community in a midway zone. It indicates the presence of a mild heart damage since the average age of those living is above the average age of the limit reached by rheumatic heart disease *en masse*. In other respects the disease is quite similar to that found elsewhere. The small number of negroes—8 per cent in a hospital where the number of colored admissions is large—is not explained in view of the fact that the disease is supposed to be more frequent in individuals of poor circumstances.

339 Boush Street.

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CONSERVATIVE TREATMENT OF PELVIC INFLAMMATION— A PRELIMINARY REPORT ON ELLIOTT THERAPY.*

RANDOLPH H. HOGE, M. D.,
Richmond, Va.

To accomplish a result by a conservative method is preferable to accomplishing the same result by a radical procedure. To accomplish a better result by a conservative measure makes that measure all the more to be desired. Often in pelvic surgery the end does not justify the means. The ablation of the pelvic organs in part or *in toto* in a young woman is a matter of great seriousness, and all too often physical or social invalidism results. Pelvic infection is, in the great majority of cases, a self-limited disease, and only in a minority of cases is extirpation of the organs needed.

In pelvic infection the doctor's aim, often not recognized, should not be to mutilate the body by removing the diseased organs, but rather, where possible, to augment and speed the natural body processes which ultimately will eventuate in a resolution of the infection in the organs and in a restoration of health to the patient. Infection may be removed with the tubes and ovaries, but restoration of health and happiness to the patient often does not result. In its stead there is sometimes pain, sterility, and maladjustment.

Conservation in gynecology has had many advocates in the past. The cardinal form of treatment has been rest and the application of heat, as has been pointed out by Holden and Gurnee and others. The application of heat dates back at least to the year 450 B. C. when Hippocrates advocated the vaginal douche for the relief of pelvic pain. These authors point out that this method of treatment was forgotten for 1,000 years and then rediscovered and written about by Galen and Celsus, and that years later German physicians heated shot and poured it into the vagina, the better to obtain prolonged heat and greater distention. In our century Gellhorn applied the prolonged vaginal douche in which the patient, seated in a tub, was irrigated with a continuous flow of water at 110°, the vulva and perineum being protected by vaseline. In recent years there has been developed a method of application of heat in pelvic infections which has surpassed all previous methods in effectiveness. Being of the opinion expressed in the two opening paragraphs of this article, we have welcomed this method as an effectual mode of application of conservative therapy.

This method of applying heat to the pelvis was devised by Dr. Charles Robert Elliott, of San Francisco, and the treatment has come to bear his name. It is administered by a machine known as the Elliott Treatment Regulator. By means of this machine a constant supply of hot water is circulated through an evenly distensible vaginal applicator made of latex, and so shaped that when distended it entirely distends and fills the vaginal cavity. It is self-retaining and radiates heat evenly and directly to all surfaces. The pressure and temperature are under constant control. The application for a prolonged period of a temperature of 130° Fahrenheit is possible by this method. This temperature is 31.4° Fahrenheit above body temperature and is considerably higher than any temperature which can be borne by the skin. This treatment takes advantage of the fact that the vaginal mucosa will stand temperatures much higher than those which can be borne by the skin of the abdomen, vulva, or perineum. Gellhorn stated that the maximum temperature which can be used on the skin is approximately 120° Fahrenheit, and that this temperature can be used only for a short time. A further advantage of this treatment is the distention of the vagina which permits all of its surface to come in direct and equal contact with the source of heat, and, furthermore, brings the source of heat closer to the rest of the pelvic structures. It has been shown in this treatment that with a temperature of 130° in the vagina, there is a reading of 104° in the urethral meatus, 104.2° in the bladder, 106° on the anterior rectal wall, and 112° in the cervix proper. The original body temperature rises only 0.4° (Holden). The gonococcus is said to be killed in a few hours by a temperature of 106°, and in 10 minutes by a temperature of 122°.

The physiological changes produced by treatment

From the Departments of Surgery and Gynecology, Medical College of Virginia.

*Read before the Halifax County (North Carolina) Medical Society, May 10, 1937.

are increased hyperemia, leucocytosis, exudation, and absorption.

At the Medical College of Virginia the treatment routine is as follows:

The bladder and rectum are empty before treatment. The patient lies on her back with hips elevated on a pillow. The undistended applicator is lubricated and inserted by the gloved hand into the vagina. The tubing is supported so that there is no pull on the perineum. The applicator is then distended and the correctness of its position is ascertained by introducing the finger along side of it into the vagina. Pressure of one and one-half to two pounds is used. The temperature is gradually increased. The treatments are given in a series of ten each. These should be on consecutive days if possible. The temperature routine and the length of treatments are as follows:

	Temperature at start of treatment	*Maximum temperature*	*Length of treatment*
First Treatment	106°-108°	125°-126°	30-40 min.
Second Treatment	106°-108°	127°-128°	45 min.
Third and subsequent treatments	108°	128°-130°	60 min.

The treatments are given by and under the constant supervision of a trained physiotherapist.

In general hospitals, such as those of the Medical College of Virginia, the number of cases of pelvic infection is great. In 1936, 489 cases of pelvic infection were admitted to the Memorial and St. Philip hospitals and there were, as yet, an uncounted number of cases treated in the out-patient department. In the treatment of many of these cases, we have had the opportunity to observe the beneficial effects of Elliott therapy. Our observations lead us to believe that with the proper conservative treatment the great majority of pelvic inflammatory cases can be cured without operation and will thereby be spared the mutilating effects of the latter; that in other cases the use of this treatment will render operation less difficult and extensive; and, furthermore, that its use post-operatively will often shorten considerably the period of convalescence.

We are at present studying our cases analytically to give statistical support to the impressions gained from observing these cases. This study is not complete, but it has shown that in 1936, the first complete year in which we used Elliott therapy, there was a reduction of 21 per cent in the percentage of pelvic inflammatory cases operated upon. At the Memorial Hospital alone the reduction was 26 per cent.

There are reports from all over the country which support these views. Holden, of Bellevue Hospital where 26,000 patients are admitted yearly to the gynecology wards and where 18,000 are seen in the out-patient department, has been using this method of treatment since 1929. He reports excellent results, and regards the method as being superior to any previously used method of conservative therapy. In some cases of cellulitis, expected to go to abscess formation, the exudate was absorbed; it was used in cases drained through the cul-de-sac; it was effective in cystitis; it was used without untoward results in desperately sick cases of acute salpingitis and pelvic peritonitis; gonorrhea of the cervix could always be cured by thirty daily treatments. Counseller, of the Mayo Clinic, reports excellent results with this treatment and advises also its use post-operatively to shorten convalescence. Sovak uses Elliott therapy preoperatively in cases of sterility. Doan and Simpson report nine out of ten cases as having been treated satisfactorily without recourse to surgery. They find the best results in cases of less than three months' duration. Moore reports three cases of puerperal infection, all treated successfully with marked analgesic effect and no hemorrhage. Mussey reports good results in pelvic inflammatory disease and also used it successfully in trichomona infections.

The method is not foolproof and should be carefully supervised. Cosgrove and Waters report four cases of injury to the vagina, resulting from the treatment. In two of these cases complete atresia developed. In a series of 10,000 treatments Holden had only one burn. This was due to negligence of a substitute nurse who allowed the temperature to go above 145°. Graham, in 600 cases, had a burn due to gross negligence in technique on the part of an interne. We have observed no accidents at the Medical College of Virginia.

Conclusion: Observations on the use of Elliott therapy lead to the conclusion that it is useful in all types of pelvic inflammatory disease; that it will render operation unnecessary in the majority of cases, and easier and less extensive in the rest; and that its use post-operatively will shorten convalescence.

I wish to acknowledge my indebtedness to Miss Loretta Phillips who gives these treatments, and to

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express my appreciation of your invitation to speak to you tonight.

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STAB WOUNDS OF THE GALL-BLADDER WITH CASE REPORT

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In reviewing the available literature on stab wounds of the gall-bladder the authors all speak of the rarity of this condition. Due to its rarity this is presented more as an interesting and unusual case than for its practical lesson.

The total number of cases to date has not, it seems, been published and is probably not known. Thole reported seventeen cases in 1912, with thirteen recoveries and four deaths. Kehr, in 1913, recorded finding records of seventeen cases with only seven isolated injuries of the gall-bladder. Over a period of seventy years, with 325 abdominal stab wounds, Wiedmann reported two cases of gall-bladder injury but one was coincident with extensive injury to the transverse colon and pylorus.

Diagnosis of stab wound of the gall-bladder is of rather academic interest. The pressing question is whether or not to operate. However, delayed cases have been diagnosed on the basis of the location of the wound, jaundice, and ascites.

Treatment of gall-bladder wound varies from simple closure to extirpation. Closure may be done by purse-string or Lembert sutures, using fine chromic cat-gut, tanned gut, or silk. It is well to avoid sewing through the mucous layer if possible. The repair may be re-enforced with omentum or omental graft. The character and extent of injury and condition of the patient will suggest the most expedient method.

The case here reported involved slight liver damage but was essentially an isolated stab wound of the gall-bladder.

Case Record—Hosp. No. 9337.—At 5:15 P. M., November 8, 1934, a white girl, age twelve years, daughter of a lumberman, walked into the Elkins City Hospital, Elkins, W. Va., accompanied by her parents. She had received an abdominal wound at the hands of her eight-year-old brother about 7:30 A. M., ten hours before admission. Taking exception to her taunts the little boy had hurled a pair of shears at her from across the room. The shears were about seven inches in length and had been thrown a distance of approximately ten feet. The shears fell to the floor after striking her. There had been considerable bleeding. The patient thought the shears penetrated about one-half inch. Her mother thought the depth was nearer an inch. At 10:00 A. M., there had been brown vomitus streaked with blood. At 2:30 P. M., some milk was vomited which had been taken one and a half hours before. At time of admission she said she felt better and her only complaint was slight pain in the left lower abdomen. There was no evidence of shock. Temperature was 98.3 by axilla, pulse rate seventy-eight, and respiration twenty-four. The leukocyte count was 17,800. Chest examination was negative. The abdomen was level and soft but there was slight subjective tenderness in the left lower abdomen. The wound was one-fourth inch in diameter and situated in the right upper abdomen just below the costal border. It was probed but the probe could not be made to pass into the abdominal cavity.

The physical findings were mainly against serious internal injury. The history and elevated leukocyte count, however, had to be taken into account.

Immediate exploration was advised. This was accepted by the patient and family without protest.

The operative record is as follows: "Pre-operative diagnosis: Stab wound of the upper abdomen; Post-operative diagnosis: Stab wound of gall-bladder and liver. Operation: Enlarged the stab wound downward under local and traced through fascia but then lost. Began ether; opened peritoneum and bile-stained blood escaped. Packed. Ample upper right rectus incision. Fluid removed with suction; explored; closed rent in gall-bladder with one silk purse-string. Closed both wounds in usual manner in layers. One cigarette drain to gall-bladder region."

Gross Findings: About one pint fluid containing bile and blood. A small slit on upper surface of fundus of gall-bladder, from which bile was escaping. Small cut in border of the liver but no active bleeding. No evidence of injury to other viscera.

The post-operative course was rather quiet. Tetanus antitoxin U-1500 was given on the first post-operative day. Maximum t.p.r. was 100-110-36 and the minimum 80-98.3-24. The temperature was normal from the fourth day on. On the seventh post-operative day patient complained of pain in the right lower abdomen for several hours but examinations were essentially negative. The drain was removed on this day.

She left the hospital on the fourteenth day. She visited the hospital two years later and at that time was in excellent physical condition. A communication dated July 26, 1937, stated that she had not had any indigestion and that her health had remained good.

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A METHOD OF TRANSFUSION FOR INFANTS.*

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Within the past fifteen years, transfusion has become a great part in the treatment of diseases of infancy and childhood. Since they are frequently used, the simplest and quickest method should be employed. The method, I believe, that is most suitable for the infant and premature baby is one in which citrated blood is given through a scalp vein or a vein on the dorsum of the hand. These veins are used because they are the most accessible ones in a baby of this age. The best scalp veins are usually found over the temporal region.

The technique of collecting the blood will not be described, for one is just as good as the other. The problem in pediatrics is giving the blood after it has been collected from the donor.

The method that I will describe is simplest, because:

1. Only one (never more than two) assistant is needed.
2. Few instruments are used.
3. It is almost never necessary to "cut down" on a vein, thereby saving the vein and eliminating the occasional infection that is sometimes encountered within the incision.
4. It is a quicker method.

What is actually needed to give citrated blood to an infant through a scalp vein or vein on the dorsum of the hand is a salvarsan flask, rubber tubing, a three-way stop cock, a ten c. c. syringe and a 22, 24 or 25 gauge needle one inch long. The size of the needle to be used depends upon the size of the vein. A needle with a short bevel is used, for there is less chance of getting out of the vein after it has been punctured.

The procedure is as follows: Select a vein. If it is a scalp vein, restrain the baby leaving only his head free. If the vein is covered with hair, shave a small area to insert the needle. Prepare this area with iodine and alcohol. Normal saline is poured into the salvarsan flask to fill the rubber tubing and to fill the syringe to the 3 c. c. mark. The citrated blood is now strained into the flask through two layers of guaze. The patient is placed in position with his head toward the operator, and is held by both hands of the assistant. One hand is placed over the occipital region and the other over the face.

The next step is the most important of the whole procedure. The vein is distended by placing a finger over the distal portion and, with the assembled syringe, three-way stop cock and needle in the right hand, the skin is punctured about 1 cm. behind the vein. Advance the needle toward the vein. In very superficial and large veins, the needle can be seen when it punctures the vein. Sometimes a definite give is felt just as in a spinal puncture. At times it can only be determined if the needle is in the vein by injecting some of the saline from the syringe. If the needle is not in the vein, a lump appears under the skin. In that case withdraw the needle and start about 1 cm. further down. It is impossible to withdraw blood into the syringe from such a small

Transfusion using a scalp vein. Baby six months old.
Transfusion using a vein on the dorsum of the hand.

*From the Babies Hospital, Wilmington, N. C.

vein. After the vein has been punctured, the needle is threaded to the hilt. Since a blunt pointed needle is being used and the vein distended, there is little chance of going through the vein while threading the needle.

Turn the key of the three-way stop cock toward the rubber tubing and fill the syringe with blood. Then, after turning the key toward the needle, slowly inject the blood into the patient's vein. The patient may move his head a little but the needle will stay in the vein.

In children over two or three years of age where there are large veins on the medial aspect of the ankle, the cubital fossa and external jugular veins, this same apparatus may be used. A piece of rubber tubing about four inches long with an adaptor is attached to the stop cock and in turn fitted to the needle after the vein has been punctured. The most suitable needle to use here is a 20 or 22 gauge about three-fourths inch long. The rubber tubing between the needle and stop cock is used to allow for motion that may be produced by the patient. It is never necessary to fasten the part to a padded board.

During the past fourteen months I have given 191 transfusions, using this method. 152 of these patients were infants, two years of age and under. Of the 152 I had to "cut down" or incise the skin to puncture the vein in only 2 cases. The remaining 39 patients were from two to eleven years. In this group it was not necessary to "cut down" to puncture the vein.

Advantages of this method are:

1. This method is very adaptable to small infants and premature babies.
2. The same vein can be used several times if it is compressed after being used.
3. The same apparatus can be used to give fluids, intravenously, to small dehydrated babies.
4. The apparatus is not expensive.
5. Numerous instruments, several assistants and the trouble of "cutting down" is done away with.
6. This method can be used in any pediatrist's office.

31st Street and West Avenue.

THE DOCTORS' PARTICIPATION IN THE HEALTH PROGRAM.*

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Present-day health departments engage in many medical services and are thus brought into close contact with the private practice of medicine. Much planning is necessary, not only to avoid encroachments but to find ways for the doctors and health departments to help each other.

In Montgomery County the physicians have been keenly interested in the health program and have given earnest cooperation in building up our present plan of doctor — health department relationships. Our plan is described in order to show how the practitioner has been made a partner in it rather than pushed aside.

When a health matter which is likely to affect private practice is proposed or is to be changed, it is our custom to refer the matter to the Health Committee of our County Medical Society. This committee consists of the officers, one other member of the Society, and the County Health Officer. This small group holds an informal meeting, usually at the close of one of the weekly luncheons of the Rockville Rotary Club. Some of the committee are Rotary members, others come as invited guests. A preliminary plan is made which is held for presentation at the next quarterly meeting of the County Society. Sometimes it is purposely talked over in the interim by doctors known to be especially interested. These preliminaries are aimed to make the subject more easily disposed of at the Society's meeting and avoid taking too much time from the scientific program.

Two years ago the Health Officer asked that provision be made for medical examination of school children. His own time was no longer available

*Read before the Medical Society of Virginia, Maryland, and District of Columbia in Leesburg, Va., May 19, 1937.

because of the pressure of other work. After the usual preliminaries the Medical Society made a recommendation that this work be divided among practitoners of the county. The Society's health committee was to draw up a list of doctors and work out other details.

The plan was adopted, and it has worked very well. Each of the health department nurses (then five) has been assigned a doctor to work with on one morning per week in the schools in her district. A fee of five dollars is provided by the County Commissioners as a modest remuneration for each half day of physician's work. The nurse makes schedules and all preliminary arrangements, brings examining equipment and tells her doctor where to meet each week. At the suggestion of the Medical Society, each physician is assigned to a territory *outside* the limits of his regular practice (except in one rural area in which all the practice is in the hands of one physician and his son). This was considered especially important in examining younger children because the parents are invited to be present at the examinations. It was feared that the influence of the examiner might lead to misunderstandings between local practitioners.

This plan covers the examination of 4,000 children per year. The kindergarten and new first grade children are done routinely; also the seventh grade of the junior high school. High school children engaging in strenuous athletics and a few children in the upper elementary grades who appear to the teachers to be below par are also included. Children found with physical defects are referred to their own physicians and dentists for corrective work. Teachers, nurses and lay health committees use their influence in getting parents interested in corrections.

Last Fall the plan was slightly modified. A separate list of physicians was drawn up by the health committee of the Medical Society for the high school examinations, women physicians being provided for girls and men for the boys. These were likewise assigned to schools outside their practicing areas. They worked with the assistance of the athletic directors instead of nurses.

Other health department clinic work is conducted along similar plans. Infant and pre-school child health conferences are held once a year in thirty localities and the work divided among eight practicing physicians. A maternity clinic is held for prenatal and postnatal examinations. This draws two more physicians into the health program. The county's three venereal disease clinics are each operated by local practitioners. The only exceptions to the use of local men are the chest clinics in which a sanatorium man from Glen Dale is employed and the orthopedic clinic in which a Baltimore orthopedist serves. Altogether approximately sixteen local men are now engaged in some form of health clinic. This is about one-third of the doctors actively practicing in the county. All receive the same fee of five dollars for either a morning, afternoon or evening session—a very modest amount, since it includes transportation.

There is an understanding between the health department and the physicians that clinics will not accept patients unless they are unable to pay for private medical service or unless they are referred to the clinic by their own doctors. The only exception to this is the infectious syphilis patient, a case which is considered so great a public menace that he is treated without questioning.

In the suburban area of our county we are now holding a few summer round-up conferences on a new plan. By the Summer round-up is meant an examination in the Spring of children who will enter school for the first time the following Fall. To avoid conflict between those who can pay and those who cannot, we conduct a registration conference for the well-to-do children and a doctor's conference, or clinic, for the others. At the registration conference, no doctor is present. The children are weighed and measured, tested for vision, recorded on examination blanks and asked to go to their doctors for physical examination, toxoid and vaccination.

In one community we have arranged child health conferences in which local doctors serve as clinicians. To each conference are invited the children in the practice of the doctor serving as clinician. This avoids somewhat the distinction between the pay and non-pay children. The consensus among the physicians, however, is that the only satisfactory kind of clinic is the free one and that this should be restricted to the low income classes.

Our county has many things which draw the doctors and the health department together. Most important of these is our laboratory, which ap-

proaches the ideal. It is centrally located, offers a diversified diagnostic service, and dispenses a variety of biologicals, including arsphenamine, whooping cough vaccine, placental extract and pneumonia serum as well as the more commonly used materials. The health office is next to the laboratory and therefore also convenient for doctors to drop in and make inquiries.

The doctors and the health department are in frequent contact. The Health Officer calls routinely after a new case of tuberculosis has been reported and when there is a question regarding quarantine. Form letters are mailed to doctors frequently and it is rumored that they are sometimes read. The Health Officer has begun a series of visits to doctors in their offices. This informal way of talking things over results in very helpful suggestions both ways. Usually there is so much of common interest that the visit is hard to end.

Through the Montgomery County plan there has been a large increase in preventive medical work. In the last three years the number of diagnostic specimens submitted to the laboratory has almost doubled. Nearly 4,000 were submitted in 1936. Last Summer I noted which doctors had had communications with the health office or laboratory and found that during a six months' period almost every one in the county had either reported a case, sent in a specimen or withdrawn a biological. I believe this shows that when official health services are set up and physicians are drawn into clinic work, the practice of preventive medicine also grows in other ways.

The salient points of the Montgomery County plan are as follows:

1. The Medical Society, and especially its health committee, has played a major part in planning doctor — health department relationships.

2. Health department clinic work has not encroached on private practice because clinics have been limited to low income families.

3. Almost all of the clinic work has been done by practitioners of the county, selected by the Medical Society, given assignments outside their practicing area, and remunerated out of public funds.

4. Records show a marked increase in the preventive medical practice of the doctors.

Correspondence

Sigerist—Socialized Medicine in the Soviet Union.

Richmond, Virginia
December 8, 1937.

TO THE EDITOR:

Of course you have seen the adverse editorial criticism of Sigerist's book on Socialized Medicine in the Soviet Union in the *Journal of the American Medical Association.*

I suppose that controversy is not particularly valuable but the editorial is so obviously biased and misleading that it perhaps should be answered. Sigerist states in his introduction that his purpose is to describe socialized medicine as it is beginning to take shape in the Soviet Union. He recognized that it is just beginning, that it is working under difficulties, and that in many respects it is crude and incomplete, but it has a purpose and an objective toward which it is moving.

The A. M. A. administration may not be able to fool all of the doctors all of the time but, apparently, it can greatly delay the coming of more adequate care of all of the people in these United States. What it more, by its refusal to exercise leadership and guidance in this matter it may participate political control of a situation which obviously should remain in the hands of the physicians themselves.

E. C. L. MILLER, M. D.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of November, shows the following cases compared with the same month in 1936.

	1937	*1936*
Typhoid and Paratyphoid	22	44
Diphtheria	188	265
Scarlet Fever	164	233
Measles	225	96
Meningitis	17	20
Poliomyelitis	3	9
Rocky Mountain Spotted Fever	0	0
Typhus Fever	3	0
Undulant Fever	2	0
Tularemia	3	7
Smallpox	0	0

NEW REPORTING FORMS FOR SYPHILIS AND GONORRHEA

A new form to be used by the physicians for reporting syphilis and gonorrhea in counties having full-time health officers has been prepared by the Department. After January 1, 1938, this form will be used for reporting venereal diseases instead of including them on the regular weekly morbidity report card.

The new system does not require the name of the patient. A case number has been placed on each form for the purpose of identification if it should become necessary.

This new system represents more than a case report, as it offers two valuable services to the physician. It affords an opportunity to furnish the identification of contacts that may reasonably be suspected of having been exposed to infection, and to report cases that have lapsed from treatment.

It is urged, therefore, that the physician consider the benefits that may be derived from this system of reporting and adopt it in his practice as his contribution to the program of venereal disease control in Virginia.

DARKFIELD FACILITIES

The delayed darkfield service offered to the profession in April, 1937, met a popular demand and has been used extensively. The procedure has proved to be reliable and physicians are urged to take advantage of this method of diagnosing early syphilis.

INDUSTRIAL HYGIENE AND SILICOSIS

In a recent survey the Bureau of Industrial Hygiene determined the number of workers exposed to specific materials and their by-products in approximately one-third of the industries of Virginia. From this data an estimate was made of the number of persons in the entire State exposed to the materials indicated.

These figures indicate that approximately the following number of industrial workers are exposed to the various dusts: organic dust, 57,200; silicate dust, 40,800; silica dust, 16,300; non-silicious dust, 9,500; asbestos dust, 350; coal dust (bituminous), 24,100; coal dust (anthracite), 500.

With reference to silicosis, approximately 16,000 industrial workers reasonably can be expected to be exposed to silica to some degree. However, a detailed survey of the industries involved will be required to determine whether or not the exposures are sufficient to result in silicosis.

In addition, it is estimated that nearly 14,000 workers are exposed to silicate dust. While not all of the silicate dusts are known to cause or even be suspected of causing lung involvement similar to silicosis, some silicate dusts like talc and asbestos are known to be harmful.

The Department is continuing to study this problem and at a later date will publish a detailed report of its findings.

VIRGINIA REGIONAL WATERWORKS SCHOOLS

A waterworks school, co-sponsored by the State Department of Health, recently was held at the Virginia Polytechnic Institute, Blacksburg.

While conferences have been conducted in the past, this school was the first in which regular classes were attempted with the enrollees divided into groups according to their previous training and experience and to the type of supply operated by them. An additional departure was the correspondence courses made available to those attending the sessions. Any superintendent or operator, who satisfactorily completes the particular course in which he is enrolled, will be awarded a certificate of merit by the sponsoring agencies.

The instruction was sponsored by the League of Virginia Municipalities, the Virginia Section of the American Waterworks Association, the State Division of Trade and Industrial Education and the State Department of Health.

Members of the Department's engineering staff actively participated in the instruction program.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Woman's Auxiliary to Southern Medical Association.

The Southern Medical Auxiliary met in New Orleans, December 1, at 10:00 A. M., with Mrs. Frank Haggard, president, presiding. The address of welcome was given by Mrs. George J. Toquino. She very interestingly used the letters in the words "New Orleans" to give a very vivid description of the city.

The address given by Mrs. Augustus Kech, president of the American Medical Auxiliary, told us about the wonderful work they were doing in Pennsylvania.

There were very few state reports read, as the time was limited.

We were then invited to attend a luncheon and a walking tour in the old French section of New Orleans, which was enjoyed by everyone.

On December 2, the business session followed a lovely luncheon in the Blue Room at the Roosevelt Hotel. The president presided and Mrs. W. K. West was toastmistress. A quartet from Tulane University sang several songs.

As guest speaker, Dr. Frank Boland from Atlanta told how Dr. Crawford W. Long hit upon the idea of using ether in operations.

Dr. Seale Harris, member of the advisory committee, urged the Auxiliary to start a memorial to three negro women slaves who underwent more than twelve operations each in the cause of medicine. The operations were performed by Dr. Marion Sims.

Mrs. Augustus Kech, president of the American Medical Auxiliary, said that the doctor's wife is the most important person in the community and urged the delegates to present a "Solid South" in health education, and to march in harmony with other organizations, especially the P. T. A.

The new officers were installed. We were taken on a delightful automobile tour of the city that afternoon, and the next morning we had the pleasure of a lovely boat trip around the harbor.

MARION EDMUNDS,
(MRS. MEADE EDMUNDS),
Petersburg, Va.

The James City-New Kent Medical Auxiliary

Met at the home of Mrs. J. B. Porterfield at Newport News on November 29. Six members were present and a new member, Mrs. F. R. Person, was received. The business of the meeting included the election of two new officers—Mrs. J. B. Porterfield, program chairman, and Mrs. F. R. Person, secretary. The other officers retained their posts for the ensuing year. A social hour was enjoyed at the conclusion of the business session.

The Petersburg Auxiliary

Held its regular fall organization meeting on November 23, at the Chaya Tea Room, Petersburg, Va., at this time honoring our state president, Mrs. James B. Stone, with a luncheon. Mrs. Hawes Campbell, state president-elect, was also a guest at this meeting.

Mrs. Stone, the speaker for the day, gave a most interesting and inspiring message regarding our Auxiliary work, and was warmly received by this, the first Auxiliary she had visited since taking office in October.

Mrs. Campbell also responded to her introduction as a guest and state officer, bringing greetings from the Mid-Tidewater Auxiliary, and urging cooperation along all lines in all state Auxiliary projects, but especially in health programs or clinics.

Seventeen members were present, and Mrs. Fletcher J. Wright, the newly-elected local president, presided, introducing the following new officers and chairmen of local committees: president-elect, Mrs. Allen Barker; vice president, Mrs. J. A. Pilout; recording secretary, Mrs. Meade Edmunds; treasurer, Mrs. H. M. Snead; corresponding secretary, Mrs. Philip Jacobson; historian and exhibit chairman, Mrs. George Reese; *Hygeia* chairman, Mrs. C. W. Lynn; publicity chairman, Mrs. Fletcher J. Wright, Jr.; public relations chairman, Mrs. Munford Yates; and program chairman, Mrs. Herbert Jones.

At the short business meeting following the luncheon, it was decided to donate to the State T. B. Bed Fund $36.50; for State Maintenance Fund $10.00; for local Y. M. C. A. membership for underprivileged boy $5.00.

A.M.A. Radio Programs for January.

CONTAGIOUS DISEASES

January 5—Sneezes and Sniffles

Cause, spread, prevention of colds, pneumonia and influenza; importance of early medical care.

January 12—Scarlet Fever, Measles, Whooping Cough

Modern attitudes toward these diseases; their prevention by community cooperation.

January 19—Smallpox and Diphtheria

Unnecessary diseases; preventable by immunization of infants.

January 26—Poliomyelitis

Information about the disease; cooperation with President's Birthday Ball.

These programs come over NBC Red Network, on dates given, at 2:00 P. M. Eastern Standard Time.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry to the American Medical Association.

Gilliland Laboratories, Inc: Gas Gangrene Antitoxin, Concentrated and Refined; Tetanus-Gas Gangrene Antitoxin, Concentrated and Refined; Antimeningococcic Serum, Concentrated and Refined; Rabies Vaccine (Modified Semple Method).

Lederle Laboratories.

Aminophyllin-Lederle.

Ampuls Solution Aminophyllin-Lederle, 0.24 Gm., 10 cc.

Ampuls Solution Aminophyllin-Lederle, 0.48 Gm., 2 cc.

Tablets Aminophyllin-Lederle, 0.1 Gm., (1½ grains).

E. R. Squibb & Sons.

Tablets Sulfanilamide-Squibb, 7½ grains.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Cevitamic Acid-Lederle.—A brand of cevitamic acid-N. N. R. (New and Nonofficial Remedies, 1937, p. 456), obtained from the fermentation of certain sugars. It is supplied in the form of tablets 0.01 Gm. and 0.05 Gm. Lederle Laboratories, Inc., Pearl River, N. Y.

Elixir Ipral Sodium.—Contains ipral sodium (New and Nonofficial Remedies, 1937, p. 106) 13.17 Gm. in 1,000 cc. in a menstrum composed of alcohol 22 per cent, glycerin, saccharin and water, flavored with a mixture of pineapple concentrate, orange syrup, fluidextract of kola, fluidextract of cascara, and tincture of cardamon compound. One teaspoonful (5 cc.) is equivalent to 1 grain of ipral sodium. E. R. Squibb & Sons, New York.

Sulfanilamide-P. D. & Co.—A brand of sulfanilamide-N. N. R. (The Journal A. M. A., July 31, 1937, p. 358). It is marked in the form of tablets, 5 grains. Parke, Davis & Co., Detroit. (J. A. M. A., November 6, 1937, p. 1543).

Propaganda for Reform.

Sulfanilamide—A Warning.—Seldom has any new drug introduced in medical practice aroused the enthusiasm that has developed for sulfanilamide. The Journal, the Council on Pharmacy and Chemistry and various individual practitioners have warned against indiscriminate use of sulfanilamide. In the Journal A. M. A., September 25, eleven contributions on sulfanilamide were published. Nine of these reported the occurrence of toxic manifestations, including dermatitis and photosensitization of the skin. Particularly serious are the possible dangers of granulocytopenia and sulf-hemoglobinemia. The latter may sometimes go unrecognized without adequate methods of diagnosis. Sulfanilamide should not be administered in association with other drugs until definite information is available as to toxic effects. Thus far only the harmlessness of sodium bicarbonate in such association seems to have been established. Magnesium sulfate and some of the coal tar derivatives are conspicuously drugs which should not be administered concurrently. (*J. A. M. A.*, October 2, 1937, p. 1128.)

Cobra Venom in Arthritis.—For a number of years various venoms, especially those of bees and snakes, have been used in the treatment of a variety of diseases. Of commercial preparations of different venoms, those of bees have been most widely used. No extensive scientific study has been made concerning the value of cobra (or bee) toxins in chronic arthritis. Many believe that such relief as arthritis patients may obtain from bee or snake venoms is probably derived from a reaction somewhat similar to that from foreign proteins (milk, typhoid vaccine). The value of snake venom as a superior coagulant is more definitely established. (*J. A. M. A.*, October 2, 1937, p. 1143.)

Vaccines in Colds.—All investigations to date have consistently shown a wide variety of bacteria present in colds. This fact necessitates the assumption either that colds are not due to any specific organism but that symptoms which we recognize by that term can be produced by a large number of different bacteria, or that the specific cause has not yet been identified. It is evident, therefore, that any attempt made now to produce immunity by vaccines must be aimed at a combination of organisms, with the hope of chance inclusion of the right one, or that the combination also by accident contains the as yet unidentified principle which causes all colds. Neither of these possibilities seems to offer a scientifically rational approach to prophylaxis. The duration of acquired immunity is another important question. There is no real scientific evidence supporting the use of vaccines for the common cold. In those individual instances in which benefit seems to result, this apparent effect may be due either to the individual fluctuation in frequency which is generally observed or to some nonspecific stimulation of immunity created by the administered proteins. (*J. A. M. A.*, October 9, 1937, p. 1217.)

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Book Announcements

Clinical Urinalysis and Its Interpretation. By ROBERT A. KILDUFFE, A. M., M. D., F. A. S. C. P., Director of Laboratories, Atlantic City Hospital; Pathologist, Atlantic County Hospital for Tuberculous Diseases; Serologist, Atlantic County Hospital for Mental Diseases; etc. Philadelphia. F. A. Davis Company. 1937. Octavo of vii-428 pages. Forty Illustrations. Cloth. Price, $4.00.

A complete book of four hundred odd pages devoted entirely to the subject of urinalysis with especial reference to methods applicable for the various routine examinations.

Although the author in his preface writes that "the primary purpose of this book is to present in a relatively concise form the subject of urinalysis from the standpoint of the physician with particular reference to procedures feasible in the office laboratory," this book seems to be a far cry from this determination. The volume is essentially a manual of laboratory procedures covering all phases of urinalyses, and would seem to appeal only to a very few of the larger laboratories as an occasional reference book, if indeed it were required at all. Any modern book of clinical pathology, devoting less space to urinalysis and covering other laboratory procedures, would be far more practical for the physician.

The teaching clinical pathologist may find Dr. Kilduffe's book of value to him in the preparation of his lectures on urinalysis.

J. H. SCHERER, M. D.

The Traffic in Health. By CHARLES SOLOMON, M. D., Assistant Clinical Professor of Medicine, Long Island College of Medicine; Lecturer in Materia Medica, Training School for Nurses, Jewish Hospital of Brooklyn. Navarre Publishing Company, Inc. New York. 1937. Octavo of xii-393 pages. Cloth. Price, $2.75.

There have been a flood of such books on frauds during the last few years, but this is the first one written by a medical man. The enumerable products about which Dr. Solomon writes have most all been exposed to the public before, but the author, in this instance, does it more professionally without making the reading tiresome. Dr. Steenbock will not like to see his name spelled as it is! There are few mistakes, however, of this kind.

Many of the products discussed are old-time ones and some of the "fly-by-nights." His exposures are not as "ferocious" as those of Consumer's Research and books put out directly and indirectly by this private agency, and therefore may be more successful in curbing some of the frauds now forced by high pressure advertising onto the gullible public. Dr. Solomon's simple medical explanations here and there are excellent and well written for reading by laymen.

The book is well worth consideration by anyone who doesn't already know the food, drugs and cosmetic "rackets" and the difficulties encountered in changing the 1906 Wiley law.

SIDNEY S. NEGUS, PH. D.

Library Service For Our Readers.

Recent acquisitions to the Library of the Medical College of Virginia, available to our readers, are given below. The only cost is return postage.

Abramson, H. A.—Electrokinetic phenomena and their application to biology and medicine.
Alexander, J.—Colloid chemistry.
American Medical Association. Medicolegal cases.—Abstracts of court decisions.
Barclay, A. E.—The digestive tract.
Bingham & Moore.—How to interview.
Bivin & Klinger.—Pseudocyesis.
Boer, J. H. de—Electron emission and absorption phenomena.
Bradbury, S.—The cost of adequate medical care.
Bromberg, W.—The mind of man: the story of man's conquest of mental illness.
Buckley, C. W.—Reports on chronic rheumatic diseases.
Bullowa, J. G. M.—The management of the pneumonias.
Carlson & Johnson.—Machinery of the body.
Cheatie & Cutler.—Tumors of the breast.
Clark, C. H. D.—The electronic structure and properties of matter.
Collins & Kalnay.—A handbook of seasickness.
Cumberbatch, E. P.—Diathermy (including diathermotherapy).
Cunningham, B. V.—Family behavior.
Diehl, H. S.—Healthful living.
Flexner, J. T.—Doctors on horseback.
Goodsell, W.—A history of marriage and the family.
Hartridge & Haynes.—Histology.
Holmes, H. N.—Out of the test tube.
Hughes & DuBridge.—Photoelectric phenomena.
Hugon, P. D.—The modern word-finder.
Kistiakowsky, G. B.—Photochemical processes.
Kleitman, N. *et als.*—Sleep characteristics.
Knyveton, J.—The diary of a surgeon in the year 1751-1752.
Koll, I. S.—Medical urology.
Kracke & Garver.—Diseases of the blood, and atlas of hematology.
Kraus, C. A.—Properties of electrically conducting systems.

Virginia Medical Monthly

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Editorial

An Old Mediaeval Custom.

Among the strange phenomena which characterized the hospitals of the Middle Ages was the custom of placing one or more sick persons in the same bed. We knew that in some foreign countries this custom was still in existence, but we admit to some surprise on discovering that in a large municipal hospital in one of our metropolitan centers it may still be observed. We have it on good testimony that 3,000 patients are comfortably accommodated by this hospital in 2,000 beds. We understand that the authorities are at pains to separate the sexes, that the color line is sharply drawn and that contagious diseases are excluded from the double bed service.

Lest we condemn too hastily this survival of a past age, the hospital would no doubt remind us of the economies thus effected—in bed space and bed linen for example, and of the favorable influence upon the nostalgia that sometimes afflicts hospital patients. It would also be amiss to forget that many subjects of hospital bundling have known no other method of recumbent accommodation. For many of them it is simply improving home situations in which three or more were accustomed to lay themselves down to sleep together, for the unusual good fortune of one bed companion. Until the domestic use of double beds among the enlightened and economically favored stratum of society goes out entirely, we may disapprove, but not too severly criticize, the custom of plural bed accommodations for hospital patients.

A Twelve Million Dollar Hospital.

New Orleans is a city of 500,000 inhabitants. Richmond is a city of almost half that size. The Charity Hospital in New Orleans is a state hospital caring for patients not only in New Orleans but those from all over the state. The Hospital Division of the Medical College of Virginia in Richmond receives state funds and in turn cares for its quota of state patients. In New Orleans today a twelve million dollar hospital is in process of erection designed to replace the old Charity Hospital. It is financed by a four million dollar legislative grant, by private benefactions, but most important of all, by the great national Santa Claus—the Federal Government.

In Richmond there is a crying need for a new and larger general hospital, a need that has been recognized and talked about for years; but one and a half million dollars is all that we can see, and we go about wondering where that much is coming from, each of us hoping the other fellow will get it for us, doubting ourselves and doing very little. Had the people of Richmond and Virginia thought about hospitals as constructively as the people of New Orleans and Louisiana have thought of them, we also would be constructing a hospital—a six million dollar hospital.

Hopkins flourishes to the North. Duke expands to the South. In the far South a progressive state takes time by the forelock and catches Uncle Sam while he is in the giving mood. Richmond is fast

losing the proud appellation she once boasted as "the medical center of the South." Nothing short of a tremendous effort and that right early will salvage a medical glory that was once hers. The combined efforts of citizen and citizeness, of the legislative and medical forces of the whole state, are needed to hold for the capital of Virginia the medical preeminence that logically belongs there.

The Rubicon Crossed.

An important article in this issue of the MONTHLY calls attention to a critical situation in the national capital. It discloses Uncle Sam in the role of doctor —physician to the employees of HOLC. It is apparently a bang-up, authentic case of socialized medicine, initiated, planned, financed and fostered by the United States government. It is only one sector on a wide front, but that sector has been completely occupied. Other advances will no doubt follow, and when, as our article points out, the mop-up squads have completed their job, private practice in Washington will be about as possible as in Leningrad.

Can organized medicine do anything to stop the forces that seem intent on socializing American medicine? It seems to us they can. The medical profession in Canada recently told the Canadian government when to halt in its scheme of health insurance and it enforced its will by refusing to serve in any part of the government's scheme. Their method can paralyze any government which tries to foist on an unwilling profession a misconceived and ruinous plan of action. If the hospitals of Washington will refuse patients under this government plan, if they will drop from their staffs those in the employ of the government, if the American Medical Association and the District of Columbia Medical Society will drop from membership doctors who participate in the plan, if the whole medical profession will stand together to offer the passive resistance of non-cooperation in all such plans which do not bear the stamp of approval of organized medicine, there is little danger of American medicine becoming socialized. As long as we are divided, call each other names and act as great individualists, the chances of resisting the threats of socialized medicine in this country are slight.

The Legal Power of Medical Societies.

A decision handed down within recent months by the highest court of one of the states of the Pacific Coast has interesting bearing upon the power of organized medicine to control the action of individual doctors. Just as the labor unions have been able to hold their members to action in conformity with the policy of the union so organized medicine appears to have within its grasp disciplinary and restrictive powers. The Court said, "The constitution, charter and by-laws of the medical society constitute a contract between the members of the society which the courts will enforce if not immoral or contrary to public policy or the law of the land. . . . The medical society, in the enforcement of its by-laws for the direct purpose of benefit to itself and to its members is not answerable for damages incidentally resulting to a third person. So long as one remains a member of the medical society, such a member can be compelled under his contract with the society to obey the laws, rules and regulations of the society or suffer the penalty of fine, suspension or expulsion. . . . The weight of authority is to the effect that in pursuing its legitimate objects an association has the right to coerce a member by fine, suspension or expulsion. . . ."

Medical Examinations Before Marriage.

At a recent conference of social hygiene executives in New York many measures were discussed as having bearing upon the fight against venereal diseases in this country. None appears to us more important than that of legislation designed to require examination of prospective brides and bridegrooms before marriage. Such legislation is now effective in eleven states and in thirteen others some sort of premarital examination is compulsory. The forces of reform need to tackle this matter more definitely in Virginia. The Medical Society of Virginia should take the lead in framing such legislation. This is the type of leadership the public has a right to expect from the profession.

Another Pneumonia Cure.

Clyde Brooks is the Professor of Pharmacology and Experimental Therapy in the Louisiana State University School of Medicine. Deuteroproteose is a protein split product derived from ox fibrin by digestion with pepsin and hydrochloric acid. At the meeting of the Southern Medical Association in New Orleans, Clyde Brooks claimed that deuteroproteose parenterally administered cures pneumonia.

It is not the first time claims have been made for non-specific protein therapy. In fact ever since

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Ichikawa in 1914 reported favorably on the intravenous use of B. typhosus in typhoid fever, a host of different preparations have been tried and many diseases, especially acute and chronic infections with demonstrable localizations, have been subjected to this form of therapy. Deuteroproteose is said to arouse the forces for immunity without the shock or chill-producing phenomenon. It is an immunizing body of low toxicity.

In a large series of cases (1200), Brooks claims to have reduced his pneumonia mortality in a striking way by the use of deuteroproteose—his mortality in lobar pneumonia was 10 per cent, in bronchopneumonia 9 per cent. In fact his figures even in Type I pneumonia are as good as with serum. The astonishing thing about his claims is that his product is said to be useful in all bacterial types of pneumonia, in both bronchial and lobar pneumonia, in late as well as early cases, in the old as well as the young.

One is reminded of an equally astonishing report published a number of years ago by Lambert in the treatment of pneumonia by vaccine on the wards of Bellevue Hospital. We know of no confirmation of Lambert's results. We wonder if anyone else will be able to make deuteroproteose do what Dr. Brooks has reported.

P. P. D.

Elsewhere in this issue of the VIRGINIA MEDICAL MONTHLY we have folded in a rather important communication from the National Tuberculosis Association regarding P. P. D. This preparation appears to have certain advantages over the old tuberculin in the diagnosis of tuberculosis and it deserves to have more wide-spread use among physicians. The advantages of the product as well as the technique of its use are clearly set forth in the communication from the National Tuberculosis Association.

Proceedings of Societies

The Danville-Pittsylvania Academy of Medicine,

At its meeting in November, re-elected Dr. P. W. Miles as president and elected Drs. L. O. Crumpler and E. E. Barksdale as vice-president. All are of Danville. Dr. I. C. Harrison was named as chairman of arrangements for the meeting of the Medical Society of Virginia in Danville in the Fall of 1938.

Fredericksburg Medical Society.

At its annual meeting early in December, this Society elected Dr. Thomas W. Dew as president, succeeding Dr. John E. Cole, and Dr. J. M. Holloway as vice-president. Dr. Thomas B. Payne was re-elected secretary-treasurer. All officers are of Fredericksburg.

The Lynchburg Academy of Medicine

Held its regular meeting on December 6, with the President, Dr. J. W. Davis, Sr., presiding. At the business session, the following officers were elected for 1938: Dr. Elisha Barksdale, President; Dr. S. E. Oglesby, vice-president; Dr. J. W. Devine and Dr. James Gorman on Board of Trustees for two years; Dr. R. D. Caldwell and Dr. S. O. Handy on the Board of Trustees for one year. The secretary is named by the Board of Trustees at their January meeting. Dr. William V. Rucker of Bedford, Va., was elected to membership in the Academy.

Dr. Barnes Woodhall, Neurosurgeon from Duke University Hospital, presented an extremely interesting and instructive paper on "Acute Head Injuries."

The Richmond Academy of Medicine

Held its annual meeting on December 14, at which time Dr. M. Pierce Rucker presided and reports were presented from its various committees. The report of the Nominating Committee was unanimously adopted as follows: President, Dr. Austin I. Dodson; vice-presidents, Drs. Charles M. Caravati and Ennion S. Williams; and recording secretary, Dr. R. A. Nichols, Jr. Mrs. John L. Burke was re-appointed by the board of trustees as executive secretary-treasurer. The new board of trustees will be composed of Drs. R. W. Miller, M. P. Rucker, Karl S. Blackwell, Dodson and Caravati.

Following the business meeting, the members adjourned to the dining room and enjoyed a Christmas supper.

The Roanoke Academy of Medicine

Has been holding its usual interesting monthly meeting during the Fall, under the presidency of Dr. H. H. Wescott, with Dr. C. T. Burton as secretary. Dr. Fred Hamlin, the retiring president, presided at the October meeting.

Drs. Wescott and C. H. Peterson presented papers at the October meeting, and Drs. C. A. Young and Churchill Robertson of Roanoke and Dr. L. R. Broome of Catawba Sanatorium at the November meeting. In December, Drs. S. Beverly Cary, Linwood D. Keyser and L. C. Spengler were the essayists.

The following have been admitted to membership during the Fall: Drs. L. C. Spengler and H. B. Stone, Jr., of Roanoke, Dr. John O. Hurt of Bent Mountain, and Dr. L. A. Micou of Eagle Rock.

The Southside Virginia Medical Association

Held its regular quarterly meeting in Petersburg on the afternoon of December 14, with Dr. G. M. Naff of Emporia, presiding. Following a case report by Dr. H. M. Snead of Petersburg, interesting papers were presented by Drs. J. Morrison Hutcheson, Thomas W. Murrell, and R. Angus Nichols, Jr., of Richmond, and Drs. James W. Hunter and George A. Duncan of Norfolk.

At the business session, the following officers were elected for the ensuing year: President, Dr. W. J. Ozlin of South Hill; vice-presidents, Drs. Leta White of Petersburg, James A. Grizzard of Drewryville, John A. Proffitt of Burkeville, and J. Lewis Rawls of Suffolk; secretary-treasurer, Dr. R. L. Raiford (re-elected) of Franklin. The executive committee for the following year will be composed of Drs. W. D. Kendig of Victoria, J. E. Rawls of Suffolk, and C. S. Dodd of Petersburg. The membership of the nominating committee includes Drs. M. H. Todd of Norfolk, T. F. Jarratt of Jarratt, and F. N. Mallory of Lawrenceville.

After a delightful dinner as guests of the Petersburg Medical Faculty, the Association adjourned to meet at Franklin on the second Tuesday in March, 1938.

News Notes

Happy New Year
to
All Our Readers!

Monthly Changes Date For Beginning Its Volume.

As a matter of convenience for binding and for reference in libraries, it has been suggested that the MONTHLY change the date for beginning its volume from April to January. Seeing the wisdom of this policy, we are making the change, effective with this issue. Not having reached the decision in time to have the Index for Volume 64 appear with the December number, we are enclosing that for April-December, 1937, inclusive, and also starting Volume 65 with this issue. We trust this adjustment will meet with the approval of our readers.

Southern Medical Meeting.

Around two thousand physicians were in attendance upon the meeting of the Southern Medical Association in New Orleans, La., November 30 through December 3, held under the presidency of Dr. Frank K. Boland of Atlanta, Ga. Many matters of special interest were discussed and the social program added greatly to the pleasure of the occasion.

Dr. Ernest William Goodpasture, professor of pathology at the Vanderbilt University School of Medicine, was awarded the Association's Research Medal for the past year.

Oklahoma City, Okla., was selected as the 1938 place of meeting, the time to be the latter part of November. Dr. James Wilkinson Jervey, Sr., Greenville, S. C., was named president. The vice-presidents are Dr. Lucien A. Ledoux of New Orleans, and Dr. Lee Rice of San Antonio, Texas. Mr. C. P. Loranz of Birmingham, Ala., was re-elected secretary-manager.

The Southern Branch of the American Public Health Association, meeting in conjunction with the Southern Medical Association, elected Dr. James A. Hayne of Columbia, S. C., as its 1938 president, and re-elected Dr. G. Foard McGinnes of Richmond, Va., as secretary-treasurer.

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The Seaboard Medical Association of Virginia and North Carolina

Held its forty-second annual meeting at the Cavalier Hotel, Virginia Beach, December 7-9, under the presidency of Dr. P. St. L. Moncure of Norfolk. A score or more of subjects were included in the program, an especially interesting subject being the symposium on Hypertension and Heart Disease. Special guests who presented papers were Dr. Perry Y. Jackson, professor of Chemistry at the Norfolk Division of the College of William and Mary, Dr. James Edwin Wood of the University of Virginia, and Dr. I. A. Bigger of the Medical College of Virginia. All papers were freely discussed. In addition to the excellent scientific program, there were several elaborate social entertainments.

Greenville, N. C., was selected as the place of the 1938 meeting, the dates being December 6, 7 and 8. Officers were elected as follows: President, Dr. W. I. Wooten of Greenville, N. C.; vice-presidents, Dr. O. R. Yates of Suffolk, Va., Dr. R. G. Tyndall of Kinston, N. C., Dr. C. P. Jones, Jr., of Newport News, Va., and Dr. G. B. Woodard of Wilson, N. C. Dr. Clarence Porter Jones of Newport News was re-elected secretary-treasurer.

The Tri-State Medical Association of the Carolinas and Virginia

Is to hold its annual meeting in Asheville, N. C., on February 21 and 22, under the presidency of Dr. Howard R. Masters of Richmond, Va. Headquarters for the meeting will be Grove Park Inn. Further information may be obtained from the secretary, Dr. J. M. Northington, Charlotte, N. C.

Medical College of Virginia News.

The Hospital Division of the college has been approved by the Council on Medical Education and Hospitals of the American Association for training residents in pathology.

Dr. George Z. Williams, assistant professor of pathology, has been added to the staff of city coroners and assigned to duty in South Richmond. Dr. Williams is the third man of the college staff to be assigned to this work, Dr. J. H. Scherer, and Dr. Paul Kimmelstiel having been appointed some time ago.

Dr. Lewis E. Jarrett, Director of the Hospital Division, has been elected vice-president of the American Hospital Association.

The addition of three new members to the adjunct faculty is announced. They are Dr. Thomas Beath, instructor in surgery; Dr. Benjamin Rawls, instructor in surgery, and Dr. A. G. Brown, III, instructor in medicine.

At Founders' Day exercises on December 7, Honorable S. Gardner Waller, Adjutant General, Commonwealth of Virginia, representing his Excellency, George C. Peery, presented a State flag to the college.

Dr. J. A. Myers, president of the National Tuberculosis Association and professor of preventive medicine at the University of Minnesota was a recent guest at the college. Dr. Myers lectured to the students on "Modern Weapons in the Control of Tuberculosis."

At the recent meeting of the Southern Medical Association in New Orleans, Dr. Harvey B. Haag was elected secretary of the section on medical education.

Dr. E. W. Skinner, associate professor of physics in the dental school of Northwestern University, was a recent guest of the college, giving a series of lectures.

News From University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on November 22, Dr. Joseph F. Geisinger of Stuart Circle Hospital, Richmond, spoke on Unexpected Massive Pathology in the Upper Urinary Tract, and Dr. J. D. Barney, of the Massachusetts General Hospital, Boston, discussed Some Recent Experiences with Urinary Lithiasis.

The Fourth Post-Graduate Course in Ophthalmology and Oto-Laryngology, including a series of lectures and clinics sponsored by the University of Virginia, was held at the Medical School on December 14-17. The speakers included Dr. F. H. Adler, University of Pennsylvania; Dr. Bernard Samuels, Cornell University Medical College; Mr. E. B. Burchell, Eno Laboratory, New York Eye and Ear Infirmary; Dr. James W. White, New York University; Dr. Oscar Batson, University of Pennsylvania; Dr. Vincent Archer, University of Virginia; Dr. Robert E. Buckley, Manhattan Eye, Ear and Throat Hospital; and Dr. Stacey R. Guild, Johns Hopkins University Hospital. Thirty-three physicians were registered for the course.

The New York Polyclinic Medical School and Hospital

Announces the following recent appointments to its staff: Dr. Thomas G. Tickle as professor of Otolaryngology; Dr. David H. Jones as clinical professor of Bronchoscopy; and Dr. Ernest E. Smith as adjunct professor of Roentgenology.

Interesting programs have been presented at the monthly meetings of its Clinical Society by outstanding specialists. At the January meeting, the following program will be presented: Foreign Bodies in the Air and Food Passages with Particular Stress on Peri-esophagitis by David H. Jones, M. D.; Bronchogenic Carcinoma by Charles E. Wolcott, M. D.; Lung Abscess with lantern slide demonstration, by H. Griffen Bullwinkel, M. D.; and Present Problems in Diabetes, by Elliott P. Joslin, M. D., of Boston, Mass. Discussion on the latter paper will be opened by Herman O. Mosenthal, M. D., and Frederick M. Allen, M. D.

Dr. Meyer Vitsky,

Who has been practicing in Richmond, Va., for several years, announces the limitation of his practice to obstetrics and gynecology. His offices are at 1103 West Franklin Street.

Dr. Charles A. Bland,

Recently of Clover, Va., late in November resigned from active duty as First Lieutenant, Medical Reserve Corps, U. S. A., assigned to Company 354, C. C. C., and located at Forest City, N. C., where he will be engaged in general practice. His offices are in Union Trust Building.

American Public Health Association.

October 25-28, 1938, have been selected as dates for the next meeting of the Association which will be in Kansas City, Mo. Dr. Edwin Henry Schorer, Director of the Kansas City Health Department, has been appointed Chairman of the Local Committee, and he will be assisted by a large group of city and state officials and community leaders.

A number of affiliated organizations meet regularly with the American Public Health Association, and it is expected that the attendance at the next meeting will exceed 3,000 professional public health workers from every State in the Union, Canada, Cuba and Mexico.

Dr. Arthur Davidman,

Class of '36, Medical College of Virginia, who has been in Washington, D. C., since completing his internship at the Logan General Hospital, Logan, W. Va., has returned to the Logan Hospital, to accept the residency there.

Scientific Exhibits for A. M. A. Meeting.

Application blanks are now available for space in the Scientific Exhibit at the San Francisco Session of the American Medical Association, June 13-17, 1938. The Committee on Scientific Exhibit requires that all applicants fill out the regular forms. Blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Illinois.

Approved for Residency in Otolaryngology.

The Gill Memorial Eye, Ear and Throat Hospital of Roanoke, Va., announces it has received official notification from the Council of Medical Education and Hospitals of the American Medical Association that it has been approved for residency in Otolaryngology.

Dr. T. Dewey Davis,

Richmond, Va., was initiated into Omicron Delta Kappa Honorary Fraternity at Washington and Lee University, early in December.

Association of Seaboard Air Line Railway Surgeons.

At the meeting of this Association in Miami, Fla., the middle of November, Dr. Joseph D. Collins of Portsmouth, Va., was elected president for the coming year, succeeding Dr. Beverley R. Tucker of Richmond, Va., and Dr. J. W. Palmer of Ailey, Ga., was re-elected secretary. At this meeting Dr. Collins, chief surgeon of the railway, was honored by being presented with a silver service, Dr. Palmer with a silver bowl, and Mr. Smith Brittingham, counsel for the railway, with a silver dish.

San Francisco A. M. A. Meeting.

The San Francisco session of the American Medical Association promises to be an outstanding one by reason of the scientific program, scientific and technical exhibits and the social functions. In addition, there is the lure of California with its scenic beauty, majestic mountains, fertile valleys and historical background. An opportunity presents to combine profit of the program with the pleasures of visiting San Francisco, the Golden Gate City with the two bridges, engineering wonders of the world.

The Local Committee on Arrangements cordially invites the profession of the country to be San Fran-

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cisco guests for this occasion, June 13-17. A list of the San Francisco hotels, with rates, has been published in recent issues of the *Journal of the A. M. A.* Requests for reservations should be sent promptly to Dr. Frederick C. Warnshuis, 450 Sutter Street, San Francisco, Cal., giving names, type of accommodations desired, rates, dates of arrival and departure.

"Group Hospitalization",

Prepared by the Bureau of Medical Economics of the American Medical Association, is an exhaustive study of group hospitalization plans and hospital insurance companies throughout the United States, and is filled with facts of importance to every physician and hospital administrator. It contains 296 pages, sixteen tables and four appendices, and may be had for seventy-five cents, from the Association at 535 North Dearborn Street, Chicago.

Dr. I. A. Bigger,

Professor of Surgery at the Medical College of Virginia, Richmond, addressed the Washington (D. C.) Academy of Surgery on December 10, his subject being "Surgery of the Heart and Pericardium."

Virginians Honored.

According to a press notice recently released, Dr. William T. Sanger, president of the Medical College of Virginia, Dr. Bernard H. Kyle of Lynchburg, and Dr. Robert V. Funsten of the University of Virginia, have been appointed members of the orthopedic council of the National Foundation for Infantile Paralysis.

Dr. James H. Smoot,

Woodstock, Va., was recently re-elected president of the Shenandoah Fair Association.

Married.

Dr. Edward Carlisle Joyner, Suffolk, Va., and Miss Ruth Elizabeth German, Richmond, Va., December 6.

Dr. Snowden C. Hall, Danville, Va., and Miss Ida Shankle Hardman of Commerce, Ga., but recently of Durham, N. C., late in December.

Dates Selected for Tri-State Hospital Meeting.

It is announced that the Tri-State Hospital Association, including the Hospital Associations of Virginia, North and South Carolina, will be held at Columbia, S. C., April 14, 15 and 16. Dr. Lewis E. Jarrett, superintendent of the Medical College of Virginia Hospitals, is president of the Virginia Association.

Dr. William P. Frazer,

Hamilton, Va., was among those elected to the board of directors of the Loudoun County Junior Chamber of Commerce at its organization meeting at Leesburg in December.

Dr. G. Bache Gill,

Prominent specialist of Washington, D. C., and an alumnus of the Medical College of Virginia, class of '16, has been elected commodore of the Corinthian Yacht Club for 1938. Dr. Gill has long been active in the development of motor boat activities in the Potomac and Chesapeake divisions, and is one of the members of that club who has assisted in developing the President's Cup regatta into one of the most important motor boat shows in America.

Dr. Robert H. Courtney,

Who has been associated with Dr. Emory Hill for a number of years, has announced the removal of his office to Suite 103, Professional Building, Fifth and Franklin Streets, Richmond, Va. He will continue his connection with the Medical College of Virginia as Associate Professor of Ophthalmology and Chief of the Eye Clinic.

Dr. A. M. Owen,

Long Island, Va., has been appointed by the School Electoral Board of Pittsylvania County to fill an unexpired term on the County School Board from the Staunton River District.

Officers of Alumni Association.

Alumni of Roanoke College in the Richmond, Va., area organized early in December, at which time Dr. E. R. Moorman of Kilmarnock was named vice-president, and Dr. Douglas G. Chapman of Richmond secretary.

Social Hygiene Day.

National Social Hygiene Day, the second observance of which has been set for February 2, 1938, by the American Social Hygiene Association, marks the high point in the year round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. "Stamp Out Syphilis—Enemy of Youth" is the slogan for 1938.

Suggestions for meetings and practical community

programs may be obtained from the American Social Hygiene Association, 50 West 50th Street, New York City. The Association will be glad to supply interested persons and groups with materials, such as exhibits, films, and literature.

The American Board of Internal Medicine

Will hold its next written examination on Monday, February 14, 1938, in various centers of the United States and Canada. It will consist of two sessions of three hours each with the morning session held at 9:00 A. M., and the afternoon session at 2:00 P. M.

The candidates who are successful in this written examination will be eligible to take the practical examination which will be held in San Francisco the Friday and Saturday prior to the opening of the Annual Session of the American Medical Association in June, 1938.

The final date for filing applications for this written examination is January 15, 1938, and all applications should be in the office of the chairman before that date. For further particulars and application blanks, please address Dr. Walter L. Bierring, M. D., Chairman, 1210, 406 Sixth Avenue, Des Moines, Iowa.

Handbook on Eye Hazards in Industry.

To secure wider distribution of its book on "Eye Hazards in Industrial Occupations" by Louis Resnick and Lewis H. Carris, the National Society for the Prevention of Blindness is now offering copies at the special price of fifty cents each as long as the supply lasts. This book, which sold formerly at the actual cost price of $1.50, was published in 1924.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces open competitive examinations for Principal Consultant in Child Welfare Services and for Principal Consultant in Medical Social Work for Children. Applications must be on file with the Commission by January 10, from the eastern states. Application forms may be secured from the Secretary, Board of U. S. Civil Service Examiners, at any first-class post office or from the Commission in Washington.

For Sale—

Allison, "Rochester" style office examining table. Mahogany finish, six drawers and compartment, pad and pillow, foot stand and stirrups. Used very little and in excellent condition. First reasonable offer takes. Located in Charlottesville, Va. Address "G. M..", care this Journal, Richmond, Va. *(Adv.)*

For Sale—

Professional model Quartz Alpine sun lamp. Also diatherm. Both in first-class condition. Prices reasonable. Address "Alpine", care this Journal, 1200 East Clay Street, Richmond, Va.—*(Adv.)*

Obituary Record

Dr. Herbert Roney Drewry,

A prominent physician of Norfolk, Va., in which place he had practiced for the past forty years, died on December 1, after a long illness. He was a native of Southampton County, Va., and seventy years of age. After attending Virginia Military Institute, he took up the study of medicine and graduated from the Medical College of Virginia in 1895. Dr. Drewry was always actively interested in the military and was retired only a few years ago with the rank of lieutenant-colonel. He held many positions of honor in his community and was identified with several medical organizations, including his local and State societies. His wife and two brothers survive him.

The following resolutions were adopted by the Norfolk County Medical Society on the death of Dr. Drewry:

On Wednesday the first day of December, nineteen hundred and thirty-seven at one P. M., after a lingering illness, Dr. Herbert Roney Drewry, passed from this life.

He had been a member of this society for more than forty years and for the past five years he had been an honorary member.

He was a gentle, kind and lovable character; a worthy and capable physician, who served his multitude of patients with no thought of his own comfort or reward.

He possessed a philosophy all his own, which at times simply exuded with amazing charm.

His keen sense of humor, which frequently gave expression, was always delightful to those whom he thus favored.

His devotion to his wife, relatives, and friends was in keeping with his other splendid reactions.

RESOLVED: 1. That in the death of Dr. Drewry, this society has lost a sincere friend and confrere and is deeply conscious of his loss.

2. That we hereby extend to his wife and relatives our profound sympathy.

3. That these resolutions be spread on the records of this society and that a copy of same be forwarded to Mrs. Drewry.

CHAS. W. DOUGHTIE
LOMAX GWATHMEY
C. J. ANDREWS

Dr. Oliver Allison Ryder,

Well-known physician of Alexandria, Va., died suddenly November 27, following an heart attack. He was a native of North Carolina and fifty years of age. Dr. Ryder graduated from the former University College of Medicine, Richmond, Va., in 1913, and began the practice of medicine in Christiansburg. In 1917, he entered the Army Medical Corps and, after retiring in 1919, with the rank of captain, spent several years of post-graduate study in pediatrics. Dr. Ryder had made his home in Alexandria since 1929 and has held a prominent place in the fraternal and professional life there. He was a past president of the Alexandria Medical Society and had been a member of the Medical Society of Virginia for twenty-four years. His wife and two children, by a former marriage, survive him.

Dr. Edward Massenberg Parker,

Emporia, Va., died December 16, having been in bad health for several years. He was a native of Courtland and seventy-two years of age. Dr. Parker graduated from the former Maryland Medical College, Baltimore, in 1900. He had practiced medicine in Emporia since his graduation. Dr. Parker had been a member of the Medical Society of Virginia for a number of years. His wife and a daughter survive him.

Dr. Robert Roy Hoskins,

Prominent Mathews County, Va., physician died at his home, "Springhill", on December 20, after a brief illness. He was sixty years of age and a graduate of the Medical College of Virginia, class of 1903. Since his graduation, Dr. Hoskins has spent most of the time practicing in Mathews, but during the World War he was captain in the Medical Corps and stationed in New York. He was active in civic and medical affairs in his section. Dr. Hoskins had been a member of the Medical Society of Virginia since 1904. His wife and several children survive him.

Dr. William Chalmers Wills.

We have just learned of the death of Dr. Wills on August 22. This took place at a Richmond hospital, after a short and severe illness with septicemia. He was thirty-five years of age, and graduated in medicine from the University of Virginia in 1930. Dr. Wills located at Victoria, Va., about a year ago and was a member of his local and State medical societies. He is survived by his wife.

Dr. Thomas C. Harris,

Centralia, Va., died at his home in that place on December 6. He was a native of Greenesville County, Va., and sixty-one years of age. Dr. Harris studied medicine at the Medical College of Virginia, and was located for some time at Kenbridge, Va., before locating in Centralia. His wife and several children survive him.

Dr. C. Leonard Purdy,

Broadnax, Va., died November 28, having been in bad health for some time. He was a graduate of the former Southern Medical College, in Atlanta, in 1890. Dr. Purdy was active in civic affairs and was a member of the Brunswick County School Board. He was also a member of the Medical Society of Virginia. His wife and eight children survive him.

Dr. John F. Long,

One of the oldest physicians in the Shenandoah Valley, died at his home near Luray, Va., on December 8. He was eighty-eight years of age and practiced medicine for more than half a century before retiring. He studied for his profession at the Medical College of Virginia. He is survived by four children, one of them being Dr. George H. Long of Luray.

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